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JULY, 1967

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MONTHLY

IN THIS ISSUE

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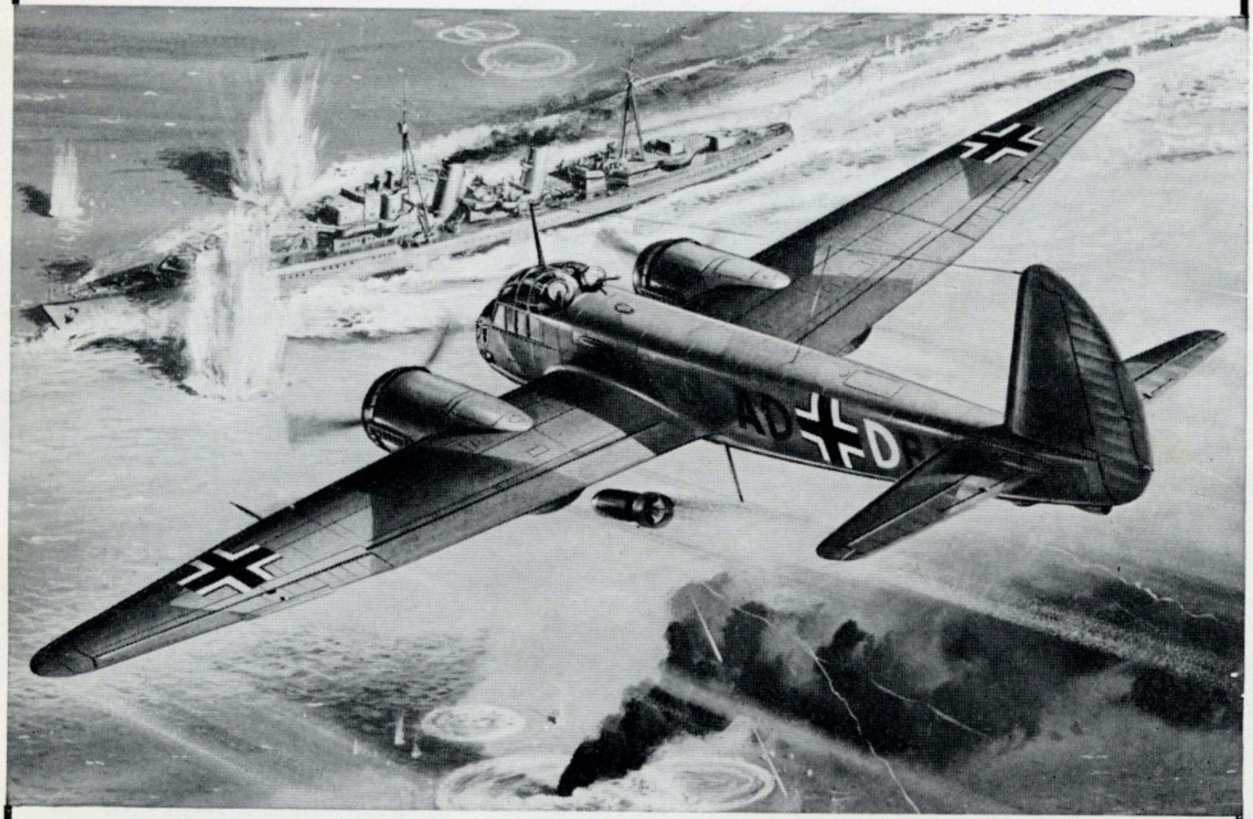

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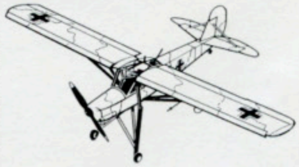

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Over the years the appeal of the magazine changed and in 1962 it was decided to change the name to MODERN RAILWAYS and its appeal to the professional railwaymen. Whilst RAILWAY WORLD caters for the older enthusiasts and features nostalgically the steam era of railways, it is felt that a gap now exists in that there is no popular magazine for the general enthusiast. TRAINS ILLUSTRATED is, therefore, being revived in July and as in its early days will be produced at irregular intervals. It will probably settle down to regular monthly appearance. The first of the new issues in which great emphasis will be placed on the "Illustrated" part of the title, will be published in July 1967.

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AIRFIX FOR PLASTIC MODELLERS magazine

Volume 8, Number 11

July, 1967

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COVER PICTURE

An Ely Transport AEC Mandator tractor with extendable tandem-axle semi-trailer, arrives at the railhead to pick up a load of steel. We feature a more 'vintage' AEC articulated combination in 4 mm scale on page 402 this month.

(Illustration courtesy AEC Ltd)

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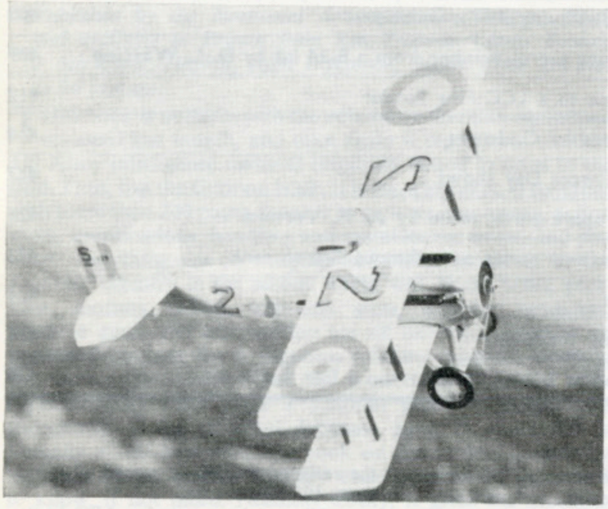
- Spad VII
- Trevithick's Locomotive
- Aston Martin DB5
- Hump Back Bridge



Above: *Lieutenant Guynemer's Spad VII flies again in model form as the latest addition to the Airfix 1:72 scale range.*

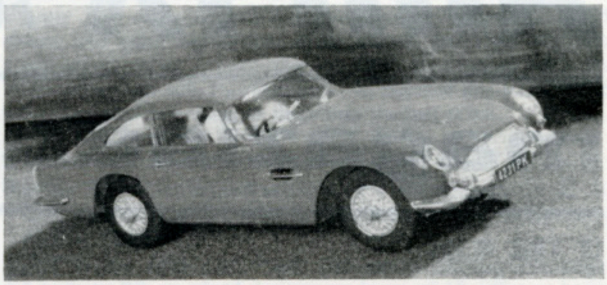
●

SUBJECT of the latest Airfix 1:72 scale model aircraft kit is the Spad *Vieux Charles* flown by the first world war French ace Lieutenant Guynemer who chalked up 54 kills in 600 air battles before his death, aged 21, in 1917.

More than 30 parts and a complete set of authentic marking transfers are included in this model of the famous SPAD VII, the original of which is preserved in Paris.

Developed by the Societe Pour l'Aviation et ses Derives (SPAD) team, led by Louis Bleriot of cross-channel fame, the Spad earned its reputation in combat with the formidable German Albatros scout (subject of another Airfix 1:72 scale kit) in 1916, and a year later was in production in England as well as France. A newly developed Hispano-Suiza 140 hp V-8 engine gave the Spad its edge over radial engined aircraft.

Detailed assembly and painting instructions are provided and the price is 2s 3d.



Above: *The sleek Aston Martin DB5 is the newest release in the Airfix 1:32 scale range of famous cars.*

●

THE Aston Martin DB5 is the latest addition to the Airfix series of 1:32 scale construction kits of modern cars. One of the world's fastest production GT cars, the DB5 is capable of a comfortable 150 mph.

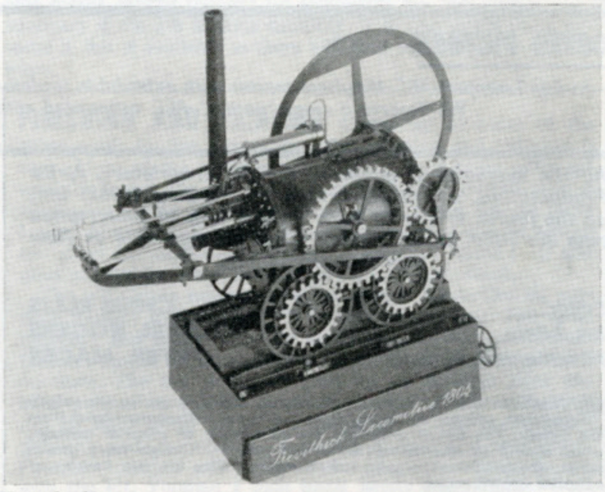
The 42 part kit accurately portrays every detail of the full-size car and the authenticity of the Aston Martin 'Superleggara' (light weight) body in miniature is enhanced by the wealth of detail in the interior and underbody areas. Separate features reproduced include the dashboard, steering wheel, gear lever, windows and headlamp transparencies, exhaust systems, and suspension details.

The usual clear assembly and painting instructions are included and the kit is priced at 2s 3d. We'll be featuring motorisation details for this model in a future issue.

●

THE second in the Airfix series of working Museum Models is Trevithick's 1804 steam locomotive—the first engine to run on rails.

Like the popular Beam Engine this kit contains an electric motor and can be built up to illustrate all the essential working details of the famous original.



Trevithick's steam locomotive of 1804 joins the Beam Engine in the Airfix Museum Models range.

Richard Trevithick (1771-1833), the Cornish engineer and inventor, developed the five-ton locomotive from his well-established single cylinder high pressure steam engine—used to power a variety of machinery.

Although the 'Pen-y-darran' engine, as it is sometimes called, was capable of hauling a 20-ton load over the ten miles between Merthyr Tydfil and Abercynon, it proved too heavy for the brittle cast iron track.

Moving parts account for almost half of the 100 moulded polystyrene pieces in the kit and metal axles are provided for the driven mechanism. The reciprocating piston and valve gear, massive flywheel, connecting rods and cogged driving wheels are the main moving features. The battery powered electric motor and drive are incorporated in an exhibition stand representing a section of the segmented track.

The Airfix kit of the Trevithick, with full assembly and painting instructions costs 21s 6d.

●

AN attractive addition to the range of Airfix electric motor racing accessories is a two-lane Hump Bridge designed to be used in conjunction with existing track components to add even more realistic thrills to miniature competitions. The bridge comes in simple snap-together kit form, consisting of roadway and two wall sections. The latter are moulded to simulate stone masonry and would also, no doubt, be of interest to railway and scenic modellers. The two lanes have contact strips and nylon connectors uniform with standard Airfix track sections. The Airfix Hump Bridge is supplied in a colourful box and costs 10s 6d.

ARE YOU A KIT CONVERTER?

We have many letters from readers requesting back copies of AIRFIX MAGAZINE containing conversion articles. Back copies of some issues are still available for the benefit of readers who may have missed or mislaid earlier editions. For example, here are some of the practical articles which have appeared.

1965: September—Jeep conversions and Battle of Britain colour schemes. **1966: March**—Firefly Profile and Red Army equipment. **June**—Half-track conversion and four-stacker destroyers. **July**—RF-4C Phantom conversion. **August**—Catalina conversions. **September**—Matador variants. **November**—Sturm-tiger conversion. **December**—Me 262 conversions and half-tracks. **1967: January**—Joseph Stalin 2 conversion. **February**—Stuka conversions and Stirling markings. **March**—Household Cavalry conversions and AEC Y Type lorry. **April**—1916 tanks and Me 262.

Would readers please note that all issues **not** *listed above are now out of print and can no longer be supplied.*

Back copies cost 2s each (including postage) for all copies up to and including September, 1966. From October, 1966, onwards the cost is 2s 6d an issue, post paid. Please address all requests for back copies, together with your remittance, to our circulation department at SURRIDGE DAWSON & CO (PRODUCTIONS) LTD, PUBLISHING DEPT. 26 ABERDOUR STREET, LONDON SE1. Note the new address.

Military Miscellany

Useful tips from readers on recent topics in the magazine

Escape-fitted DUKWs

I WOULD like to add to what has already been said on the subject of the DUKWs fitted with fire escapes.

I am afraid that Messrs Whiley and Bailey were incorrect in saying that the ladders were 'borrowed' from the London Fire Brigade (Letters, April 1967), since they were in fact built by Messrs Merryweather of Greenwich especially for the Admiralty's Department of Miscellaneous Weapons Development (DMDW).

The original intention had been to investigate the feasibility of fitting a standard 100 foot telescopic fire-escape to a DUKW; this proved to be impossible since this escape weighed five tons and a reduction of at least half the weight would have been necessary. It was found, however, that by discarding the standard winch and turntable mechanisms and substituting a different method of raising the escape, the installation *should* be feasible.

Tests were, in fact, carried out using an escape ('borrowed' from the Brighton Fire Brigade) lashed to a landing craft. Merryweather were ordered to produce *five* of the special ladders in six weeks (normally such a task would take 36 weeks), a job which they completed 72 hours ahead of schedule!

The escapes, as fitted to the DUKWs, were raised by the vehicles own winch drives and were fitted with two machine guns at their heads (with armoured-plating to protect the gunners) and beach-to-cliff-top telephones; they could be fully extended in the time taken for a DUKW to emerge from the sea and cross the beach. Operational trials were carried out by the Amphibious Wing, RASC.

An interesting footnote to the whole operation is that an East End tailor had to be called in as a consultant, on the problem of constructing a suitable cover to camouflage the escape, since standard camouflage netting tended to flap.

Colin F. Noad.

German insignia

READERS may be interested in the accompanying drawings showing the Division Insignia which were often painted on the front of tanks of the Waffen-SS Panzer Divisions.

There were seven SS Panzer Divisions, these being:

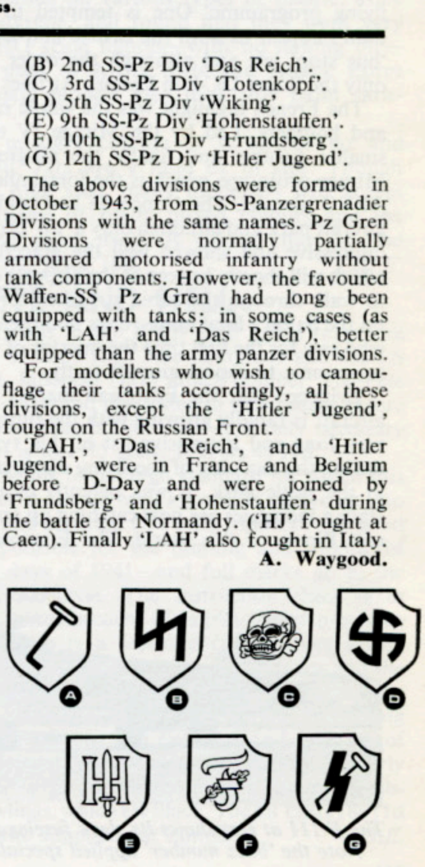
(A) 1st SS-Pz Div Liebstandarte 'Adolf Hitler'.
(B) 2nd SS-Pz Div 'Das Reich'.
(C) 3rd SS-Pz Div 'Totenkopf'.
(D) 5th SS-Pz Div 'Wiking'.
(E) 9th SS-Pz Div 'Hohenstauffen'.
(F) 10th SS-Pz Div 'Frundsberg'.
(G) 12th SS-Pz Div 'Hitler Jugend'.

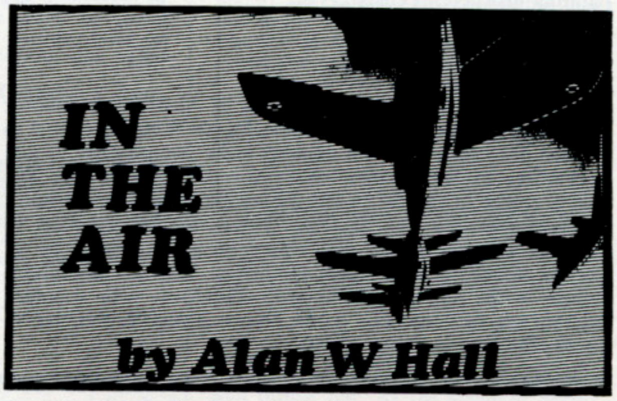
The above divisions were formed in October 1943, from SS-Panzergrenadier Divisions with the same names. Pz Gren Divisions were normally partially armoured motorised infantry without tank components. However, the favoured Waffen-SS Pz Gren had long been equipped with tanks; in some cases (as with 'LAH' and 'Das Reich'), better equipped than the army panzer divisions.

For modellers who wish to camouflage their tanks accordingly, all these divisions, except the 'Hitler Jugend', fought on the Russian Front.

'LAH', 'Das Reich', and 'Hitler Jugend,' were in France and Belgium before D-Day and were joined by 'Frundsberg' and 'Hohenstauffen' during the battle for Normandy. ('HJ' fought at Caen). Finally 'LAH' also fought in Italy.

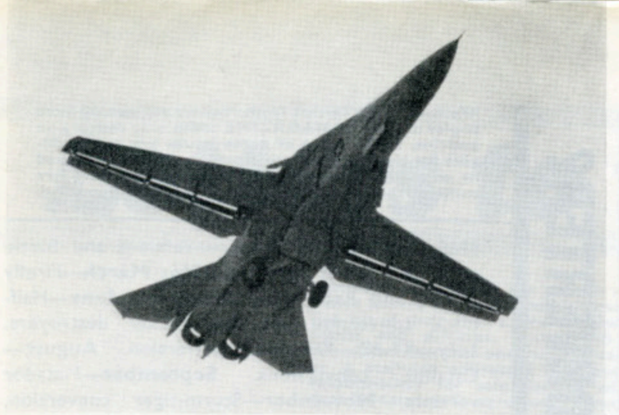
A. Waygood.





IN THE AIR

by Alan W Hall



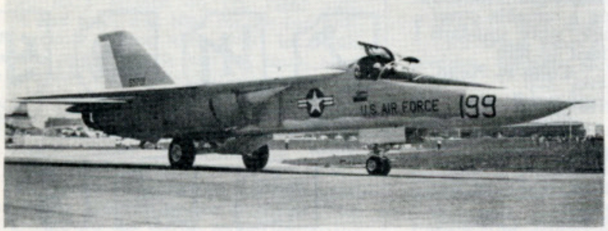
Highlight of the Paris Salon was the first appearance outside the United States of the F-111 'swing wing' fighter. Here it comes into land with everything down and wings in the forward position.

WITH an air show that is now as large as that at Paris every other year, there is little that a correspondent can do but high-light several parts of it. The 27th Salon was without doubt the greatest air show of all time but from the surprises point of view it lost out on the 1965 event.

The Russians didn't bring their supersonic transport as everyone had hoped but they did produce something rather spectacular in the spacecraft field. The Americans on the other hand, determined not to be outdone this year, went in for size and dominated the scene not only with the magnificence of their pavilion but with sheer weight and numbers of aircraft. From the Guppy Stratocruiser, the Super DC-8, Starlifter, and so on in the civil field to the A-7 Corsair, F-111, and a host of new helicopters on the military side, they took up a great deal of the flying programme. One is tempted to wonder why a DC-9 didn't appear as both the British and Dutch showed their own 'bus stop' jets and although the order books are overflowing only the Super DC-8 in Eastern Airlines livery was on show.

The French highlight was the whole range of Mirage fighters and bombers. Led by the Mirage IV there followed the two smaller fighters and finally the all-grey, high, swept-winged Mirage prototype which is the forerunner of the Anglo-French AFVG aircraft. The Concorde had pride of place in the static aircraft park and although only a 'tin' prototype it was extremely impressive and showed well the graceful lines of this aircraft which will shortly be seen at the airports of the world. The queue to walk through the cabin stretched for several hundred yards on the Salon's final public days and there must have been many who saw for the first time the interior of what should be the first supersonic transport aircraft to fly.

Evidence that the European market for the light executive aircraft is rapidly growing with the times was obvious from the very long and impressive list of this type of aircraft that flew during the morning of the flying displays and were in profusion in the static park. It was patently clear that the French and Italian industries are now catching up and equalling the Cessnas and Pipers of this world. The European industry appears to be concentrating on the single-engined four to six place aircraft that can be adapted for training purposes or general touring. There are, of course exceptions like the Fan Jet Falcon and our own HS 125 but on the whole it seems that due to the distances involved and the initial cost that the lighter type of aircraft is selling better to this market.



The F-111 at rest shows its sleek fuselage and nose to advantage. Note the 'buzz number' applied specially for the Paris show.

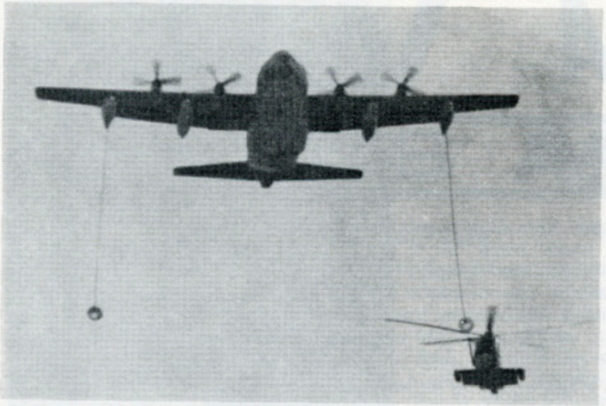
This does not mean to say that the Americans are being left behind. The French agents for Cessna, for example, say that their profits on the sale of American executive aircraft for the last two years has exceeded even their own expectations. And aircraft like the Commander line now have, apart from the normal 'cooking' version, a turbo-prop adaptation and of course, the sleek Jet Commander. The Learjet, too, is worthy of mention and so is the magnificent Cessna 411 which appears to the layman to be the ultimate in comfort and ease of travel.

I also took a close look at a new German aircraft which will doubtless be on the investigation list of customers wishing to have an aircraft with an above average payload capable of a lot of hard work for little outlay. This was the Dornier Sky Servant, an interesting twin engined high-winged aircraft in the Skyvan class which obviously has a STOL capability combined with very high manoeuvrability during the flying displays equalling many of the lighter aircraft in its aerobatics. From the same stable came the Dornier 31 a VTOL aircraft using the same principle as the Hawker Siddeley Harrier. The former did not fly which was rather a shame but it looked very impressive in the static park and when developed should be capable of considerable use in the medium weight transport role.

The 27th Salon was also notable for the many helicopters in all shapes and sizes which were frequently on display in the air. During the first week of the show a HH-3E Sea King or 'Jolly Green Giant' as it has been dubbed arrived direct from America by air having been refuelled nine times in flight from the US. The Sea King is the only helicopter according to the Americans that is equipped for in-flight refuelling . . . I wonder if they remember the display by two Wessex at the Farnborough SBAC Show a few years ago!

A new version of the Hercules, the HC-130P has been developed for the air-to-air refuelling of helicopters. Due to the high speed of the Sea King (up to 140 knots), the helicopter can fly a normal formation with the tanker. This was ably demonstrated at Paris. The refuelling system utilises the conventional probe and drogue hook-up. During a typical mission the tanker aircraft can fly 1,800 nautical miles at its gross weight, transfer 5,000 lb of fuel and return to its original departure point with adequate fuel reserves. Two helicopters can be refuelled simultaneously.

An interesting aspect of the refuelling technique is that once the helicopter has approached the area of the drogue, it can

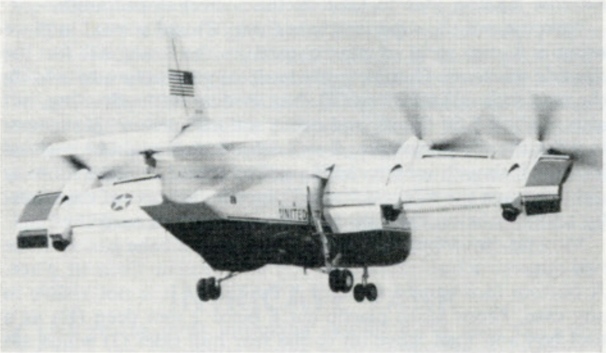


A Hercules HC-130P demonstrates the flight-refuelling technique evolved for helicopters with a Sea King approaching the port fuelling line.

reduce power by one third. The tanker aircraft's airflow literally drags the helicopter along with it . . . a phenomenon similar to that called 'drafting' in car racing.

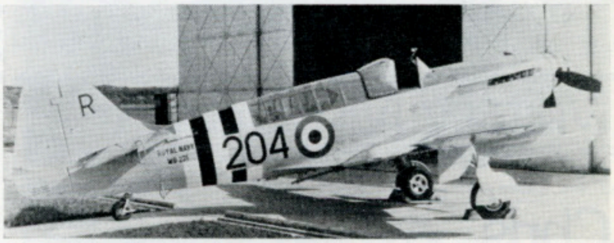
Another interesting helicopter shown by the Americans was the Lockheed XH-51A. Apart from having an almost fantastic top speed of about 240 mph this helicopter is fully aerobatic. It has even been flown inverted with the rotor blades spinning below the fuselage.

The XH-51A is a research aircraft built at the Burbank factory of Lockheed Aircraft for the US Army and US Navy. It incorporates the so-called 'rigid rotor' principle, which represents a major breakthrough in rotary winged design. The rotor blades, cantilevered from the hub are rigidly attached to the mast. This gives the XH-51 an unusually high degree of stability and permits manoeuvrability at the same time. As a military aircraft it provides a more stable gun platform than the present day helicopter.



Top: *The XC-142A VTO aircraft which is being evaluated by the US Air Force.* **Above:** *Menacing shape of the Mirage IV.*

For the model maker the Paris Salon was an undoubted delight. From the F-111 to the P-3 Orion in the static park there were numerous items which are already in model form or can be easily adapted from existing kits. The French authorities put 'the cat amongst the pigeons' by requesting that all aircraft on display be given a 'buzz number' on the fuselage. I wonder how many readers like myself saw the first photographs from the show of the Harrier with the number '103' on the sides and imagined that the RAF were changing their identification markings! The only problem was that, although each exhibitor carefully carried out the instructions given, it was rather difficult to see why the request had been made. Perhaps it was for the commentators whose aircraft recognition is not so good at the best of times and even in spite of the added aids seemed to get a lot of detail incorrect.



Latest historic aircraft preserved by the Royal Navy and being brought back from Australia by HMS Victorious *is this ex-RAN Firefly 5, WB271, which has been repainted with a K on one side of the fin and an R on the other to commemorate the contribution of Fireflies to Korean War operations from HMAS* Sydney *and HMS* Glory *respectively. Machine is to be presented to the FAA Museum at Yeovilton.*

NEWS FROM IPMS

THE next meeting of London Branch area of the Society will be on Friday, June 30, when E. J. Creek will be showing a further selection of rare aviation films, these to include German film of the Me 262 and He 129 together with others covering some of the pre-war Hendon Air Display Shows. Gruppe 66 German Aviation Research Society are responsible for lending these films and we are indebted to them for the opportunity of seeing such rare and excellent material.

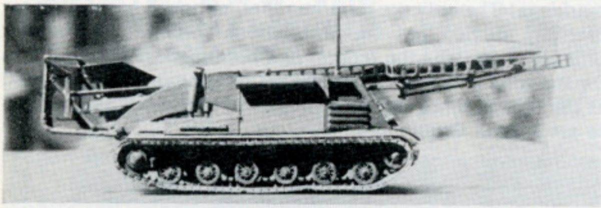
The North East Area Branch (address given in last month's issue) held a one day exhibition at Usworth Aerodrome, Sunderland Flying Club, Sunderland Airport, on Saturday, June 10, when there was also a raffle with kits as prizes presented by Mr Amos of Alfred Warner's Model Shop, Newcastle upon Tyne. On June 4 at Wideopen Community Centre Hall, Wideopen, Gosforth, Newcastle, there was a competition for Military Vehicle Models.

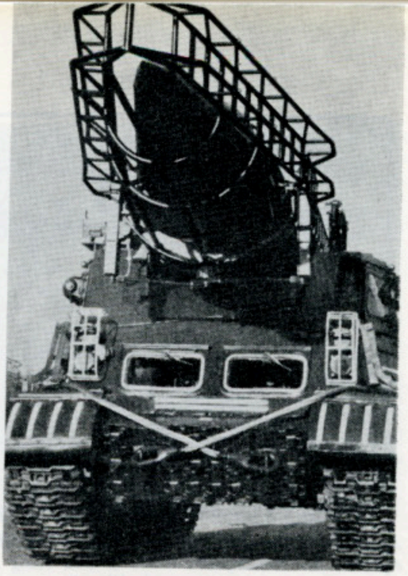
The Birmingham branch will be holding regular meetings at the YMCA, Snow Hill, Birmingham, on the first Friday in every month.

The London area meeting held on May 27 welcomed Mr John Roast of the Historical Aviation Preservation Society, who gave a most informative and, at times amusing, talk on the trials and tribulations of getting their Lancaster ready and flying up to the 617 Squadron re-union at RAF Scampton, a feat that the daily press made light of, but which in fact was a real battle against time. Also at the meeting we were delighted to see so many visitors who had made our acquaintance during our sojourn on the HAPS and 'History of Air Power' stands at the recent Air Fair at Biggin Hill.

Finally note that the film show referred to above will commence at 8.15 pm, so get there early if you want a good seat!—*R.C.J.*

Soviet Scud-A missile carrier



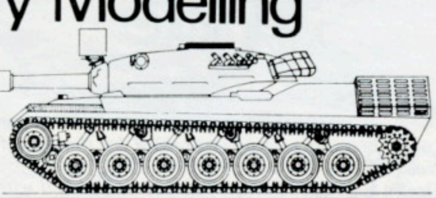


Right: *Note details such as spare track shoes, tow ropes, and complex cradle in this view of a Scud-A (T-7A) on its JS carrier* (Photo: 'Soviet Union'). **Left:** *Completed model has a simplified cradle, though skilled solderers could attempt more detail here.*

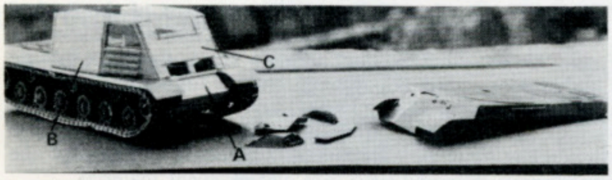
Military Modelling

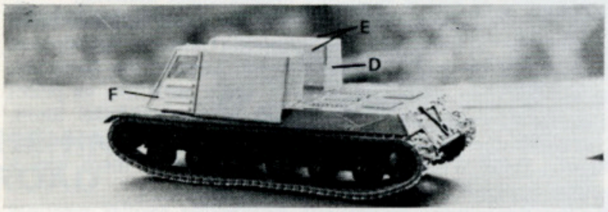
by

Chris Ellis



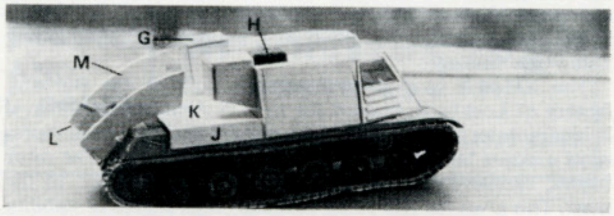
SCUD-A is the NATO designation for the T-7A, one of the Soviet Army's earliest and most widely used tactical surface-to-surface missiles. This is a radio-guided weapon with a weight of about 4½ tons and a maximum range of 165 km carried on a suitably modified JS-3 chassis which incorporates erector gear for raising the missile to its vertical firing position.





All the superstructure, unless otherwise stated, is from 20 thou plastic sheet, available from Bellona or other sources, and the only other main requirement is for OO or TT scale signal laddering which is available in 12 inch lengths from model railway specialists like Beatties. TT scale laddering is best if you can get it, as the rungs are at the exact spacing needed.

Start by assembling the JS chassis following the kit instructions but cutting away the complete glacis plate forward of the driver's hatch. Similarly saw off the front plate from the lower hull. With the chassis completed, you'll now have a yawning gap in the nose which is filled in by a plain 18 mm×9 mm rectangle of plastic sheet (A) and a 22 mm×11 mm rectangle—trimmed to fit inside the dustguards—on the lower front. First picture shows an unmodified JS hull top for contrast, plus the bits which have to be hacked away. While you are at it, saw away very roughly at the front upper hull corners for a distance of about 8 mm from the front to give clearance to the new superstructure sides (B) which are next cut from card, scored, bent, and fitted in position (trace all the superstructure parts direct from the drawing). You'll find that the front ends of the new sides—which are sloped inwards on the model—need to be trimmed along the bottom edge up to a height of ½ mm at the extreme leading edge to take up the correct sloped angle.

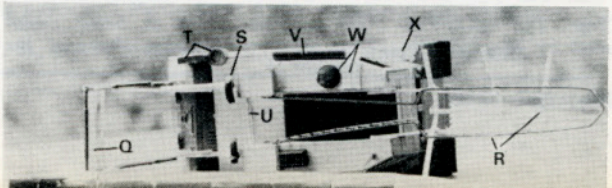


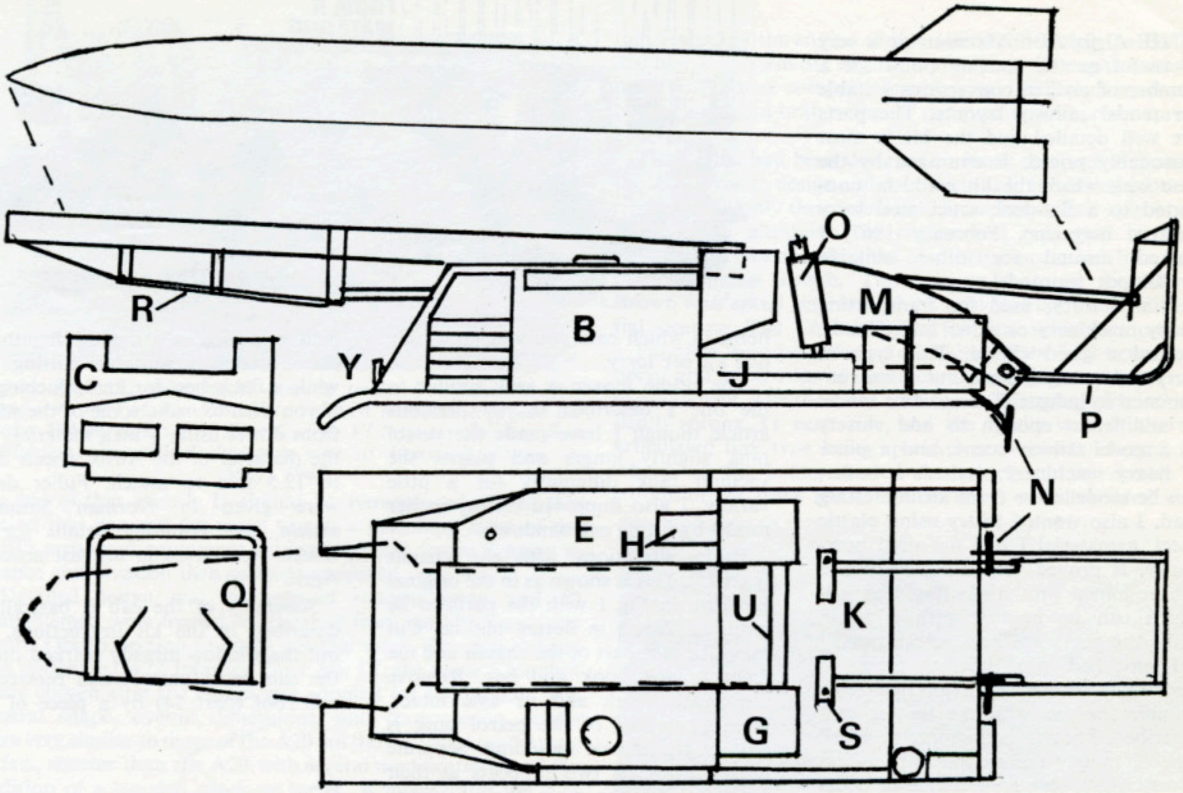
Next cut out the superstructure front (C) and cement in place using a 1 mm strip of plastic card as the lower sill for the driver's windows. Complete the basic superstructure by adding the rear ends (D) and tops (E). Not evident in the drawing, but also marked E in the second constructional picture, is an inner face for the superstructure, 8 mm deep, which could be omitted if desired, though is essential if you don't want daylight showing right through the side windows. Complete this part of the model by adding ribs on the side doors from strips of card (F).

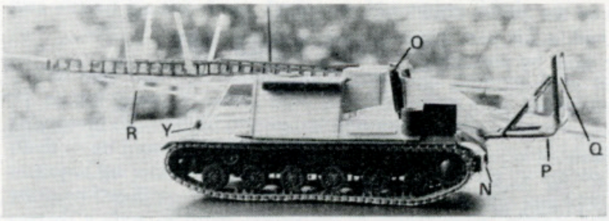
Moving on to the third picture, next cut out the parts for the two superstructure extensions (G) and cement them in place. A bottom face can be omitted if desired as it is not visible in any case. From scrap plastic cut a piece 2 mm deep (H) as a tool box and then move on to the rear hull sides (J) which are simply rectangles stuck in place vertically. A new deck section (K) is another rectangle cemented across the hull.

The erector gear comes next, consisting of the two arms (M) which are from 40 thou plastic card, cemented to the pivot plates (L) which are cemented on the hull backplate.

The remaining two construction pictures show all the other points. Move on to the pistons (O) which are cemented at the front ends of the erector arms and are simply made from lengths of sprue with a thinner piece of round-section plastic at the bottom to depict the deck anchorage. Next assemble the







firing pad arms (P) which are best made up from heat-stretched sprue unless you are lucky enough to have some round-section plastic of the right size. The curve is also achieved by heat but don't worry if the assembly is flimsy at this point as there are some very convenient little corner strengtheners (from 10 thou card) required here. All the remaining framework on the firing pad arms is made up from strips of plastic card 1 mm wide—which can be cut from 10 thou card with a sharp craft knife against a steel rule. The firing pad is completed by a back-plate (Q), a girder immediately beneath this, and another curved bar across the top. Leave all this to set firm (and square) before cementing it to the erector gear pivot plates.

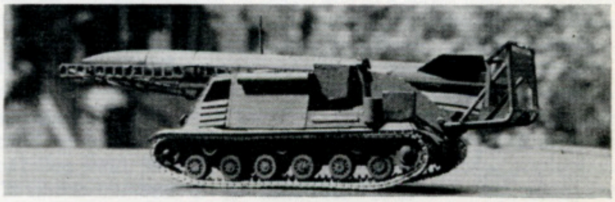
Two round buffer plates (N) are cemented to the lower edge of the hull backplate and I used the turret hatches for these, inside out with the hinges cut off. Final part of the main construction is the protective cradle for the missile, which is made up from the signal laddering. This is simply bent to follow the pattern dotted in the plan view, and cut to length accordingly.

Start assembling the cradle by cutting the two forward projecting arms which are cemented inside the superstructure front. Then cement the rear end of the laddering-cum-cradle to the inner faces of the superstructure parts G. A strip of plastic card is now curved round a pencil, slipped inside the ladder rungs, and cemented against the two projecting arms ahead of the superstructure. All this demands a little care and patience and you need to hold the assembly at this stage until it sets at the right angle. Polystyrene cement can be used for securing the laddering as it effectively 'welds' the plastic around the metal.

With the first of the curved cradle strips in position, it is a simple matter to add the others (R) in similar fashion taking the positions from the drawing. I left all the ends projecting until the whole thing was finished, then trimmed them all down.

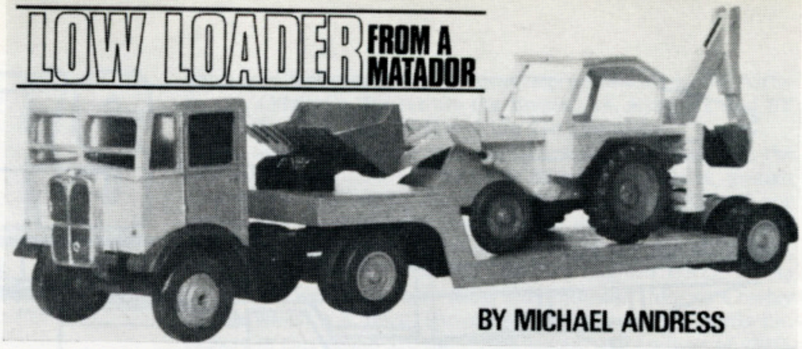
All that remains is the detailing. Most important are the two curved arms (S) which grip the rocket for erecting. These are best sawn from the top of suitable plastic discs or discarded wheels. Then add the cylinder and stowage box (T), and a support (U) which is non-prototypical but necessary to support the inner end of the rocket on the model. There is a cylindrical box (V) each side of the superstructure which I made from sprue, a round and square hatch together (W), and headlamps (Y). Finally fill in any gaps (X) on the dustguards or elsewhere with plastic putty. One last detail is a radio mast.

I made the Scud missile from an old marking pen with Sellotape wrapped round it to get the right diameter. The Roco Corporal missile warhead is ideal for the Scud, but if you don't have one to spare it should not be difficult to carve and file from a wooden dowel or skewer. There are four fins cemented at right angles.



Another view of the completed Scud-A model. Colour is dark green overall with optional red stars on superstructure sides.

LOW LOADER FROM A MATADOR



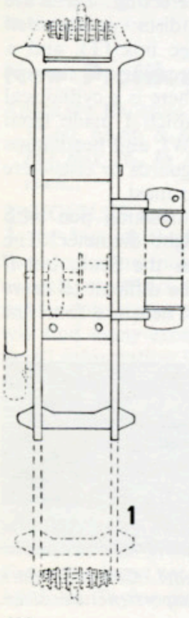
BY MICHAEL ANDRESS

THE Airfix AEC Matador kit is very useful as the starting point for a number of civilian conversions suitable for model railway layouts. The parts are well detailed and the kit is most reasonably priced. Encouraged by the ease with which the kit could be converted to a flat-deck articulated lorry (AIRFIX magazine, February 1967) I looked around for other suitable prototypes to model.

A well lorry, used for transporting heavy machinery or other bulky loads, seemed a good choice. This type of lorry is less often seen, but is not uncommon in industrial areas. As a model it is different enough to add variety to a model railway scene, and a piece of heavy machinery, such as a boiler, can be modelled to form an interesting load. I also wanted to try using plastic sheet, a material I had not used previously. It proved very satisfactory and can be joined with Airfix liquid cement which can be applied with a brush while the parts are held in position.

I modelled two different types of well lorry trailer each of which is suitable for use with the tractor unit described. The first is the more standard type of trailer; the second is based on a lorry I have seen on a couple of occasions but have never been able to measure up or photograph and so the dimensions are approximate only.

For each lorry (prime mover and semi-trailer) you build, you will need two Matador kits—the second to provide enough wheels. Alternatively you can make some of the wheels from dowel or use commercially available items in which case you will need only one kit per lorry.



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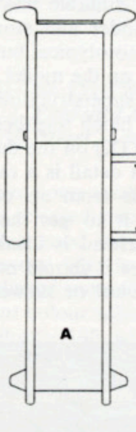


2

All drawings are numbered and keyed to references in text.

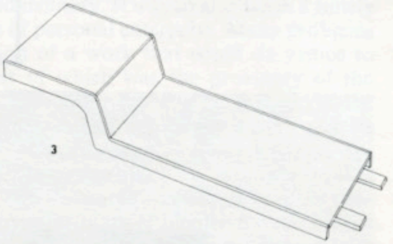
The prime mover is very similar to the one I described in my previous article though I have made the petrol tank slightly longer and placed the vacuum tank differently for a little variety. I also improved on my earlier model by fitting cab windows.

Begin alterations with the chassis (part 15). This is shown as in the original kit form in Fig 1 with the parts to be removed shown in dotted outline. Cut away the rear part of the chassis and the front towing hook and bar. Remove the winch drum and its axle intact. The upper half of the petrol tank is part of the chassis moulding. Separate it by cutting its two supports at their junction with the main chassis girder. Glue the two halves of the petrol tank together (the lower half is kit part 32) and then shorten the tank by removing a 5 mm long central segment (this is most easily done with a fine saw) and rejoining the two ends. The modified tank is then fitted in position as in Fig. 2.

Fit a rectangle of .02 inch thick plastic sheet, 9 mm by 15 mm, as shown (part A in Fig 2). Parts 41 (gear box), 35 and 36 (front springs) and 44 (front axle) are now added in that order. The rear springs (parts 37 and 38) fit with their rear ends in the positions the front ends would have occupied, while the front ends are supported by two small blocks of scrap plastic fixed to the outsides of the main chassis girders in the appropriate positions. If the rear axle is then fitted (and the front and rear wheels put temporarily in position) before the cement sets firmly, and while the springs and supporting blocks can still be moved, the parts can be adjusted so that the axle is square and the correct distance from the chassis. Ensure that the chassis is level with all four wheels touching the ground.

The wheels were turned down as described by Norman Simmons (October, 1966, issue) to a diameter of 13 mm and a thickness of 3 mm (take down the back surface only) by mounting each on a 10 BA bolt and using a hand drill held in a vice as a makeshift lathe. A chisel makes a suitable cutting tool while a file is best for final touching up. If you wish to make some of the wheels from dowel using $\frac{1}{2}$ inch material, take the diameter of the Airfix wheels down to 12.5 mm to match. Fuller details were given in Norman Simmons' article, and mounting details for the wheels were given in my last article in April.

Assembly of the cab is basically as described in the kit instructions. Cut out the window already marked out on the cab back (part 1) and replace the cab roof (part 14) by a piece of 0.02 inch plastic sheet cut slightly oversize. Paint the inner surfaces of the cab sides, front and roof together with the seats, engine cover and other cab fittings matt black at this stage. Windows are easily made by adding slightly oversize pieces of transparent Bellona sheet.



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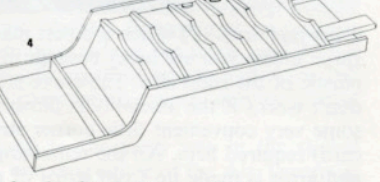

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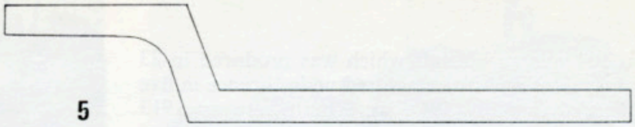
The first trailer unit is shown in the photos and the basic structure is illustrated in the two diagrams, Fig 3 and Fig 4. It is built up from the kit body floor (part 17) and 0.02 inch thick plastic sheet. Begin by trimming the projecting flanges off the floor so that its edges are flush. The downward projections from each of the cross braces on the undersurface of the floor must also be cut off.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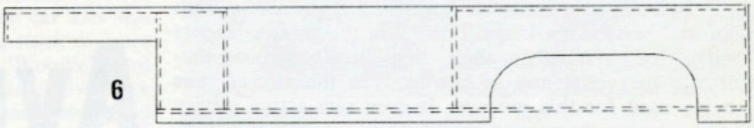
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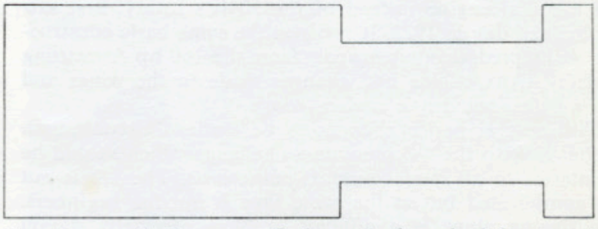
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Make winches from scrap plastic and mount on trailers as shown in model pictures.

Remove the two small projections from the undersurface of the floor between the last cross brace and the rear edge of the floor as these would be in the way at a later stage of construction.

Fig 5 shows a full-size pattern for the sides of the trailer which are cut from the 0.02 inch thick plastic sheet. Cement these to the sides of the floor so that their top edges are flush with the top surface of the floor. Further pieces are cut to fit between the two side pieces in front of the floor, to form the raised section of the floor, the sloping part between the two level parts of the floor, and the two cross pieces beneath the raised section of the floor.

Fit two pieces of 1 mm thick card, 4 mm by 15 mm, to the undersurface of the rear part of the floor, with the outer edge of each piece 5 mm in from the side of the trailer. They fit up to the last cross brace and project 6 mm out from the rear edge of the trailer floor. Four wheels and four hubs are needed for the trailer. I used 1/16 inch diameter dowel for the two short axles, filing each end down to a smaller diameter to fit snugly into the wheels. Cut the axles to length so that there will be 5 mm distance between the wheels when they are mounted, with their back surfaces facing each other. The axles are then cemented to the rear edges of the two projecting pieces of card.

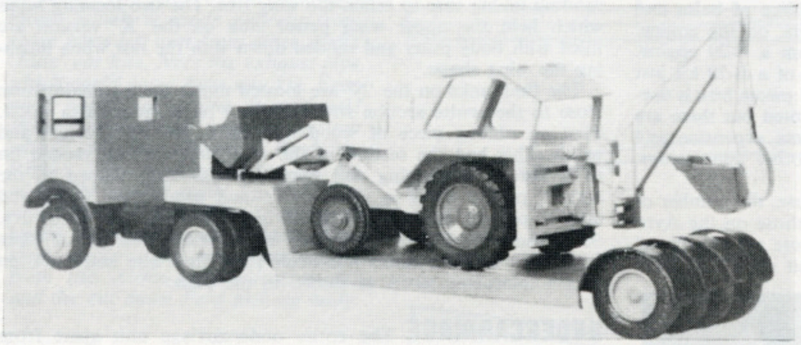
Four mudguards are fitted, one over each wheel. Each mudguard is a 5 mm by 23 mm rectangle of 0.02 inch thick plastic sheet with the two corners at one end slightly rounded. Shape each mudguard by bending it round the curve of a length of $\frac{1}{2}$ inch diameter dowel and holding it in place with a piece of bandage or other material wrapped around it, and tied in place. Put the whole thing into boiling water for two or three minutes and then transfer it to cold water. On removing the material you will find that the plastic sheet has taken up the curve of the dowel and will be of a suitable shape to fit over its wheel.

Cut a rectangle of 2 mm thick card to fit beneath the raised front part of the floor. This is to adjust the height so that the trailer floor is level when the trailer and tractor are coupled. Before cementing the card in place drill a 1/16 inch diameter hole to take the short projecting length of axle left on the winch drum fitted to the prime mover. Place the hole so that when the two units are coupled they are the right distance apart.

The second trailer has high sides and a different wheel arrangement. Fig. 6 shows the basic construction which is entirely of 0.02 inch thick plastic sheet.

Begin construction by cutting out the floor (shown in Fig 7) and the sides (bold outline in Fig 6). Cement a strip of plastic 1 mm wide along the lower edge of each side (but not across the wheel openings). This will form a ledge on each side to support the floor. Cut out the three upright pieces which fit at the front end of the trailer and the raised deck piece. Now cement together the floor and sides and before the cement sets add the other parts you have cut out. Get everything square and allow the glue to set hard before doing anything more. Next build up the wheel casings starting with the large inner pieces which are followed by the top strips. These top strips fit between the trailer sides and the inner walls of the wheel casings. Add the back of the trailer which can be cut slightly oversize and then trimmed to fit neatly. The bodywork is completed by fitting the front pieces to each of the wheel casings.

The final step is the addition of a rectangle of 2 mm card beneath the raised front deck section as in the other trailer to fit the pillar on the prime mover.



Below: *Rear view of the low loader and the high sided trailer. OO scale vehicles make an ideal load.*

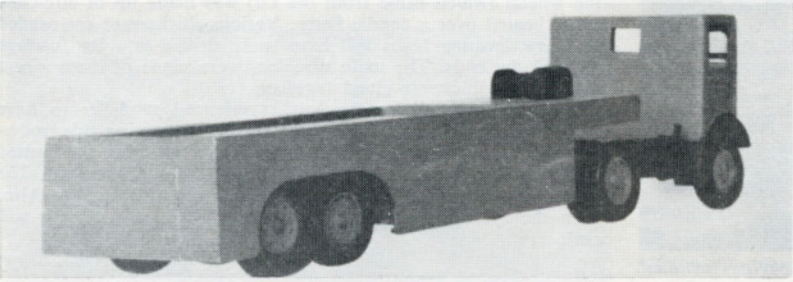


Photo: Crown Copyright

Avro 504N

ALAN W. HALL CONVERTS THE NEW AIRFIX KIT

THE Avro 504 was an aircraft which was produced in 23 different versions and manufactured under licence in five countries. More than 8,300 504's were built between 1913 and 1931 when the last one left the production line. It was also used for almost every job in the book. Starting life as a bomber there were fighter, trainer and communications versions built. It also came on floats and appeared in both civilian and service markings. I am sure that many readers will, like me, remember their first 'five-bob-round-the-circuit' flip on a 504 and as late as 1936 the aircraft was still being used for this purpose. It even saw active service in Greece during the second world war.

The Avro 504N was produced after the 1914-18 war. The RAF needed a stable training aircraft and the 'N' which had a radial engine instead of the 504K's rotary, first saw the light of day in 1922. It retained the same basic construction as its predecessor but apart from the 160 hp Armstrong Siddeley Lynx engine had changes made to the wings and had an oleo-pneumatic undercarriage.

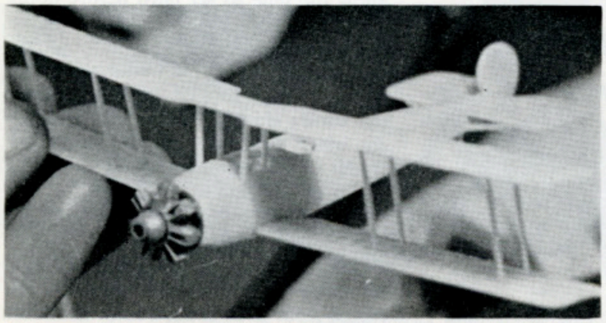
With several major changes to be made, the conversion of the 'K' into the 'N' presents a challenge which should be of interest to all model aircraft enthusiasts. The job is not too complicated but at the same time is not for beginners. The rigging alone is a difficult problem especially if you haven't done anything like this before.

The work of conversion divides very nicely into three main sections; wings, fuselage and undercarriage and I will deal with each separately because the work involved on the 'N' conversion can be applied to several other variants of the Avro 504 and readers may wish to follow part of what I have done in order to produce their own particular fancy from the many possibilities.

FUSELAGE The basic fuselage shape needs little alteration apart from the nose. Here the portion immediately forward of the fuselage interplane struts needs cutting off after the fuselage has been stuck together and allowed to dry. I cut mine at an angle corresponding to the line of join between metal and fabric on the full scale prototype so that if any slight remains of the join are left after cleaning up it would still look authentic.

Once the new section had been cut from a piece of balsa and applied (using polystyrene cement) I set to work on the engine. For this I used the front row of cylinders from a B-29 engine. Don't think that I am advocating the purchase of a B-29 kit just to get one part. This is where the spare bits and pieces box is useful. Luckily I just happened to have what I wanted but there are many other radial engines contained in kits less expensive and which the reader may have already used for other conversions. The Airfix Walrus kit is one example.

You may well find that whatever engine you use, the number of cylinders on the engine will not correspond to those on the Avro 504N. This was the case with the B-29 where there are nine 'pots' and the Lynx engine has seven. I therefore cut off all of them except one and filed down the cylinder block sticking back the required number of cylinders and doing a little filling where needed with body putty. The exhaust collector ring behind the engine was made by heat treating a piece of sprue and whilst still warm wrapping it round a piece of dowel rod held in the vice.



Above: *504N under construction shows new engine installed.*

To return to the fuselage itself; when dry the nose section should be rubbed down to the correct shape, given a coat of dope and talcum powder mixture and again left to dry. The engine is then added after a final sanding. The only other modification I made to the fuselage was the addition of three small struts to the tail skid. The plan will provide reference for this and it was done to add just a little extra realism to a part which looks a little bare if taken straight from the kit.

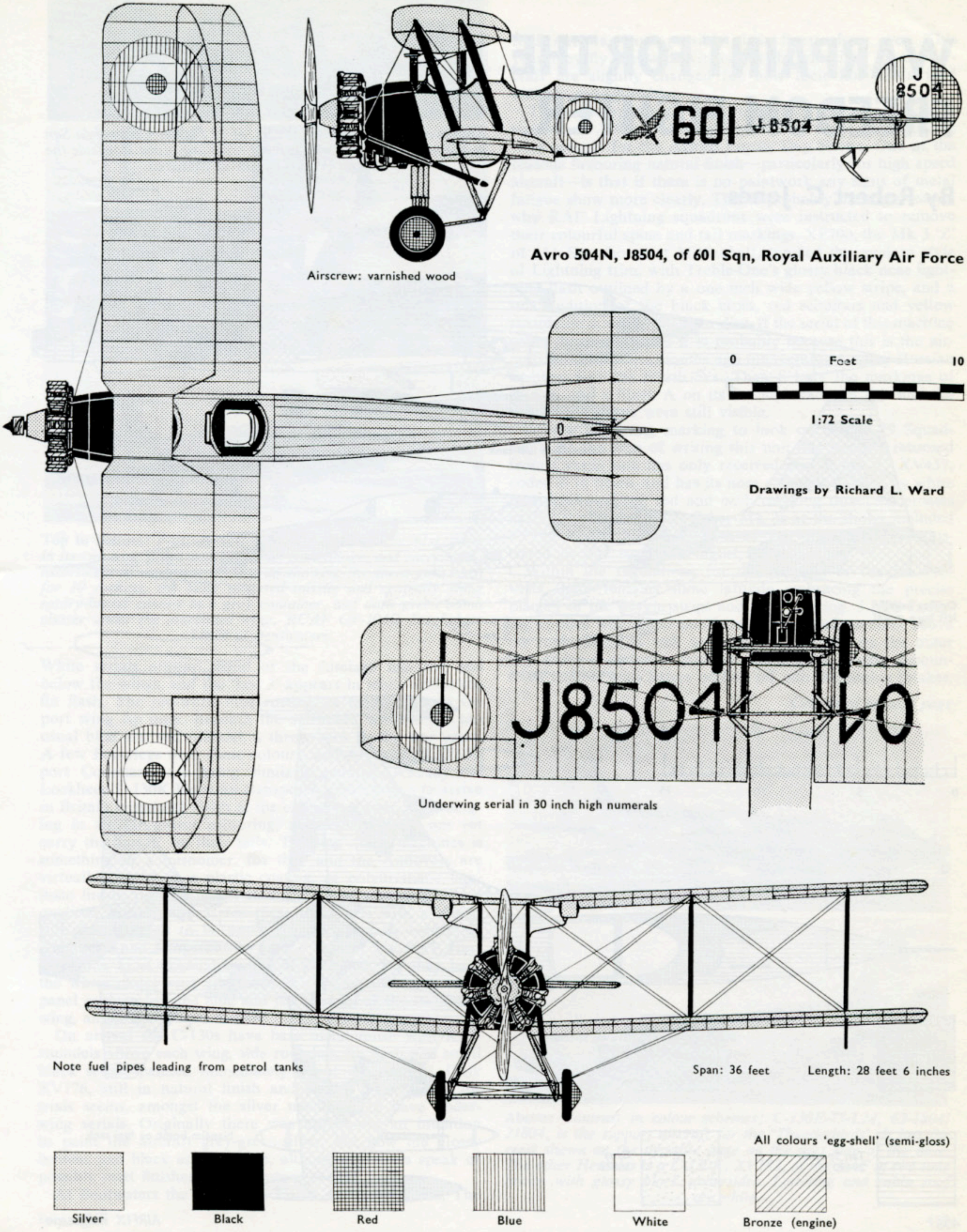
WINGS The wings of the Avro 504N are almost entirely different from the 'K'. Luckily the use of files and sandpaper on the kit product will supply what is required and close reference is needed to the plan. The span remains at a scale six inches but both sets of ailerons on the upper and lower wings need reshaping and the centre section of the top wing needs a large cut-out on the leading and trailing edges. All of these modifications were done with a sharp knife and fret saw. The shape in plan is cut out and then the aerofoil section replaced by filing and sanding taking care to retain the wing ribs. The two locating holes which held the upper wing petrol tank on the 'K' version are filled with body putty and sanded down with the rest when finishing the wing shape.

The fuel tanks on the 'N' are located under the top mainplanes close to the centre section struts. These I made from balsa wood. First an oblong piece of wood was cut to the right length and width. This had the section of the wing undersurface sanded on to it before positioning and once dry was then shaped to the correct profile using a sharp knife and sandpaper. Dope and talcum powder filler was applied and again sanded when dry. After the assembly of the wings and fuselage two petrol pipes from each of these tanks was made from fuse wire and stuck on to the interplane struts as shown in the plan.

UNDERCARRIAGE The entire undercarriage unit apart from the wheels (which came from the kit) was made up of stretched sprue heated over a candle flame. Various thicknesses are needed and new locating holes will have to be drilled into the fuselage to hold the ends. The main oleo legs were made of three pieces of different thickness glued together.

One can only advise the less experienced modeller to have some practice at stretching spruce before attempting this undercarriage. The principle of the operation is to leave the heated section a few moments before pulling the ends to stretch it. The longer you leave it the thicker will be the resulting section. Also, keep the sprue stretched until completely cool, otherwise it will curl.

Continued on page 430



Avro 504N, J8504, of 601 Sqn, Royal Auxiliary Air Force

Airscrew: varnished wood

Drawings by Richard L. Ward

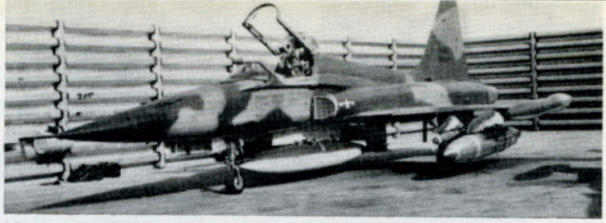
Underwing serial in 30 inch high numerals

Note fuel pipes leading from petrol tanks

Span: 36 feet   Length: 28 feet 6 inches

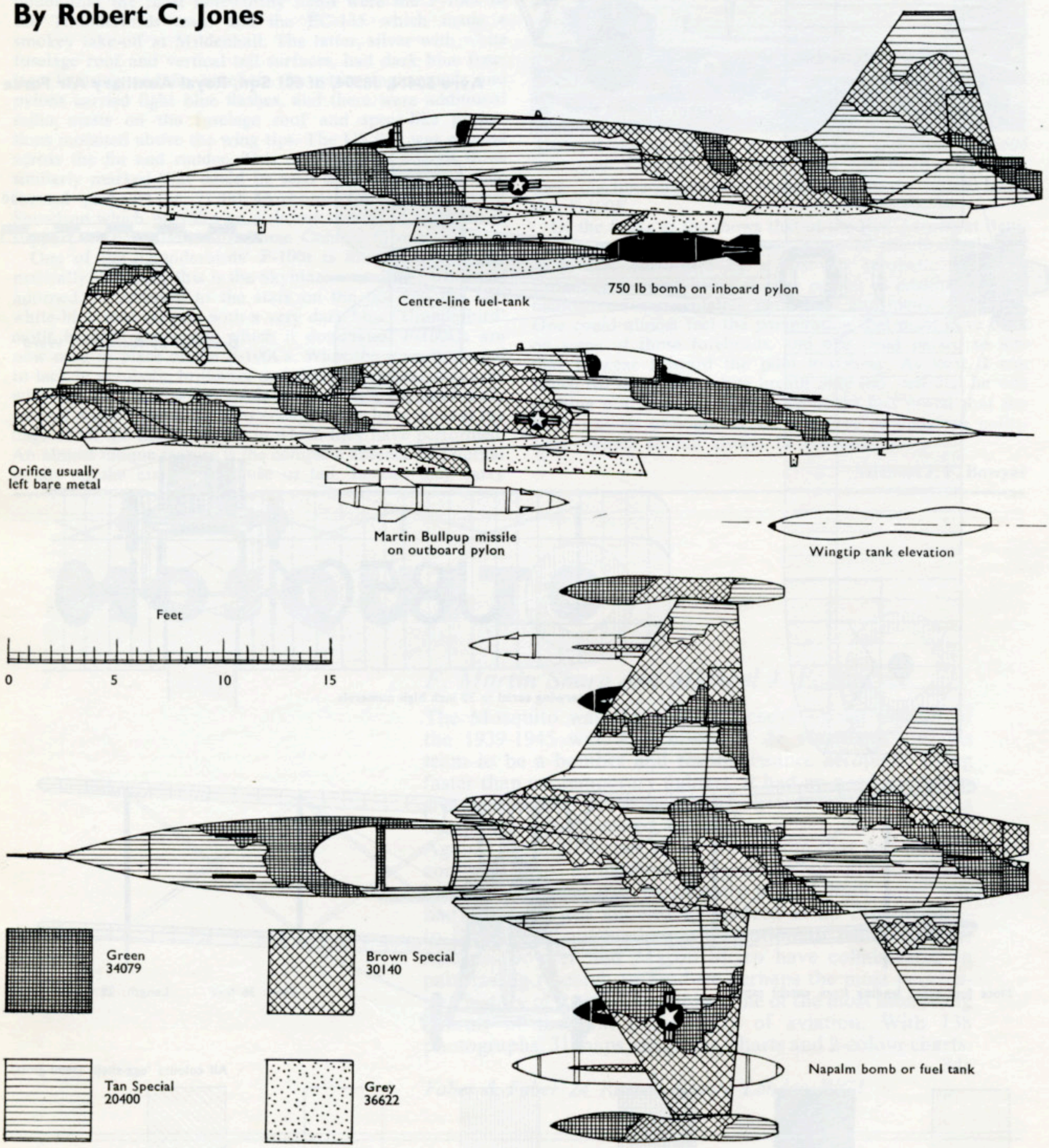
All colours 'egg-shell' (semi-gloss)

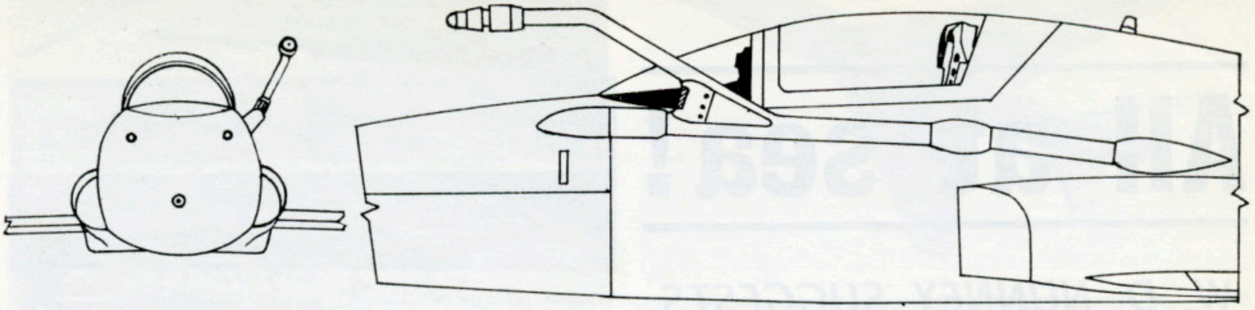
WARPAINT FOR THE FREEDOM FIGHTER



Above: *An F-5C, 63-8429 (38429), of 10 Fighter Commando Sqn in Vietnam seen fitted with a flight-refuelling probe alongside the cockpit* (Photo by David Menard).

By Robert C. Jones





Above: *Enlarged detail view of fuelling probe fitted to some F-5s in Vietnam. In model form this can be made from stretched sprue.*

In addition to the present day camouflage patterns and colouring as used by the USAF in Vietnam there is a new and completely different scheme now coming into use on aircraft based in Asia Minor countries such as Thailand. The purpose of the drawing is to illustrate this new pattern as applied to the F-5 and also to differentiate between the Vietnam and Asia Minor colouring used. The following camouflage mixes are matched to original colour chips applicable to both areas and providing that these are adhered to exactly the resultant shade will match those on the actual aircraft.

Asia Minor Colouring	Vietnam Colouring
34079 Green	34079 Green
30140 Brown Special	34102 Green
20400 Tan Special	30219 Tan
36622 Grey	36622 Grey

On the Asia Minor scheme the Tan Special and Brown Special replaces the 34102 Green and 30219 Tan shades of the Vietnam scheme, the basic Green 34079 and undersides Grey remaining common to both. Note that the drawing illustrates patterns only, serials and other markings not quoted. Other photographs showing F-5s in the Vietnam scheme appeared in AIRFIX magazine, April 1967.

Colour Mixes

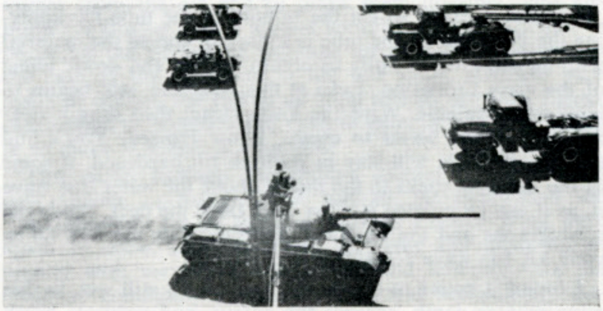
34079: 2 pts H30 or Afx M3, I pt H104, touch of H102, touch of H134.
30140: 3 pts H29 or Afx M5, I pt matt white, ½ pt H110, touch of H102.
20400: 6 pts matt white, 3 pts H17 or Afx M7, 3 pts H9, touch of H119.
36622: 8 pts matt white, ½ pt H28 or Afx M8, touch of matt black and H17.
34102: 2 pts H30 or Afx M3, I pt H29 or Afx M5, touch of H25.
30219: 3 pts H29 or Afx M5, 2 pts matt white, ½ pt Afx G2 or H125, touch o Afx M1 or H110 and touch of matt red.

Colour mixes courtesy IPMS advisory service. In the above list 'Afx' indicates Airfix paints and 'H' indicates Humbrol. Code numbers are given for brevity.

May Day in Moscow

Though this year's May Day parade in Moscow did not reveal any new weapons, the military section of the parade gave the customary glimpse of Soviet armour and missiles. Here are some of the types which took part.

Photographs by Lorraine Taylor



Above: *A T-62 moves up to take its place in the parade. Latest type in service, the T-62 fires a fin-stabilised high velocity shell. It is distinguished from the T-55 by the longer gun, fume extractor, and different wheel spacing, the gap being between the rear pair.* **Below:** *A group of ASU-85s, the standard Soviet air-portable tank destroyer, followed by T-62s. Note prominent infra-red searchlight on turret front of latter vehicles.*

Top: *Looking like a petrol tanker is the Shaddock surface-to-surface tactical missile on its transporter followed by one of the latest types of Soviet ICBMs towed by an eight-wheel tractor.* **Above:** *The Gannef is a ground-to-air missile carried in pairs on a fast tracked carrier. It also has a surface-to-surface capability. Note booster rockets on sides.* **Below:** *Griffon long-range surface-to-air missiles (nearest) and Guideline short range surface-to-air missiles lined up before the parade. Vehicles participating in the parade were in the usual Soviet 'parade finish' of polished dark green with white wheel rims or hubs. Insignia of small red star on white shield outlined red was carried on turrets or doors.*

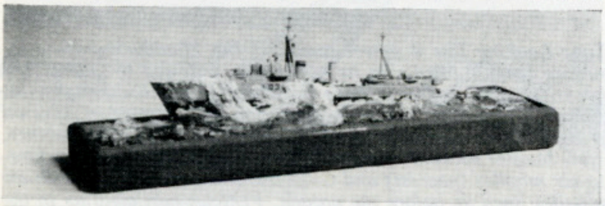
All at sea!

W. D. NUNNEY SUGGESTS AN INTERESTING DISPLAY METHOD FOR AIRFIX WARSHIPS

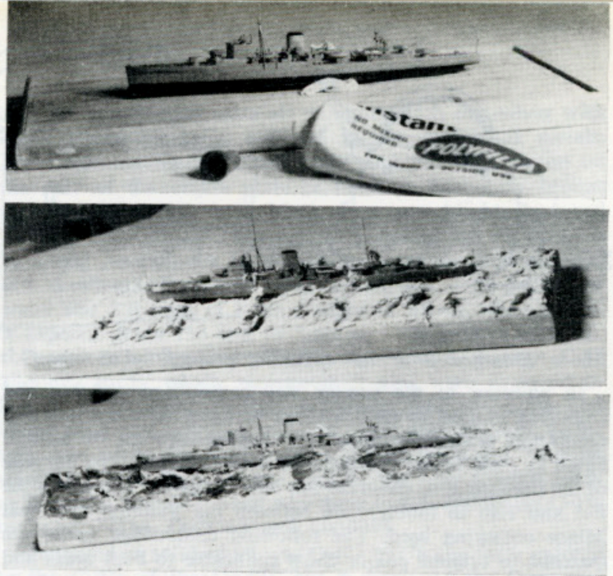
EXCELLENT as the models of my Airfix Famous Warships series looked on their base cradles, I felt a need to see them in a more realistic attitude with a sense of action and colour that only the sea could give. To this end I decided to mount them in their environment, the ocean, or as good a representation of it as could be managed in model form. Materials required needed to be cheap and easily obtainable and the tools extremely simple.

After experimenting with several materials, I discovered that Instant Polyfilla sold in tubes was the most suitable. It was not only pliable, but whilst still plastic enough to be worked, it would stay as positioned until set hard. It also dried white so that any portion that was missed by the paint brush would appear as sea foam. The Polyfilla in tubes is smoother and takes a little longer to set hard than the powder form that you mix yourself.

Other requirements are $\frac{7}{8}$ inch planed soft wood, this thickness of timber giving a very firm base. The edging material is any 1 inch x $\frac{1}{4}$ inch wood moulding; I used the shape that is rounded on one edge. The only tools required were a tenon saw, a hammer, a mitre block, an old knife, panel pins and a paint brush; the paint used will be described later.



Top: *This model of HMS* Cossack *has been mounted in a 'sea' as described on this page, using the artwork from the kit box lid as a guide to wave formation and colouring.* **Above:** *You can use the same 'sea' to display seaplane and flying boat models; here an Airfix Walrus comes to the aid of a ditched Spitfire.*



Top to bottom: *The three stages in mounting HMS* Ajax *on a realistic 'sea' base as described in this article. A first blob of Polyfilla locates the model in the desired position.*

I began by cutting a piece of $\frac{7}{8}$ inch wood to the required size needed to accommodate the model of HMS *Ajax* illustrated. This was 6 inches x 16 inches. I then edged this base with the 1 inch x $\frac{1}{4}$ inch moulding, mitred at the corners for neatness, using $\frac{3}{4}$ inch panel pins punched just below the surface. All holes and any bad corner joints are filled with Polyfilla.

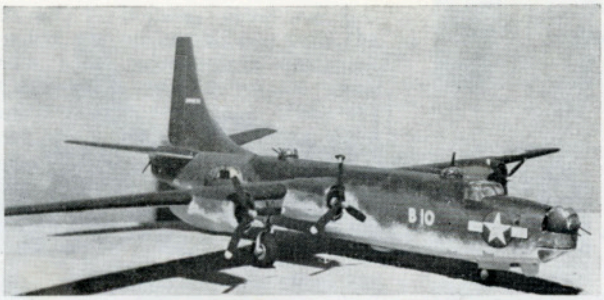
You can now go ahead with making the 'sea'. On to the base squeeze a blob of Polyfilla, then press the ship on to this at the required angle and let it set hard. Next spread the Polyfilla all over the surface of the base, to the minimum thickness of the height of the edging.

I found it easier to cut the bottom of the tube for applying the Polyfilla. As the tube is squeezed, spread the material with an old kitchen knife to obtain the 'up and down' effect of the wave formation. Even at this stage the 'sea' begins to look most realistic. Wipe the knife clean, then drag it over the crest of the waves to create 'White Horses'. You'll find that the Polyfilla will stay in position till hardened. If some of the material sticks to the model above the water line leave it, as it can be painted later as wash from the deck. Study the photographs and the excellent illustration on the box lid of your kit for wave formation and colour.

I found it better to colour the 'sea' whilst still wet, as this gives greater depth, spreads the colour, and prevents brush marks. The colours used were designers' gouache from Winsor and Newton Ltd which can be obtained from artists' supplies shops. I used black, white, yellow and blue, with yellow and blue mixed together for green. Start with dark green and dark blue for the part between the waves, finishing with pale blue and pale green, topped at the crest of the waves with white and very pale blue.

After the Polyfilla is completely dry touch up the 'sea' with very little white, brushed lightly over the darkest portions to simulate the spray.

Finally paint the edges of the base any desired neutral colour and apply the name transfers from the kit. This natural scenic setting adds a great deal of 'eye appeal' to a collection and using large bases you can have two or more ships in action positions or even 'replenishing' at sea.



This magnificent model of the Consolidated PB4Y-2 Privateer can be added to your collection if you're feeling like something really ambitious in the conversion line. This article shows how it's done using the Airfix Liberator as a basis.

Making a Privateer

D. L. WHITING SHOWS HOW TO TACKLE A PB4Y-2 CONVERSION FROM AN AIRFIX LIBERATOR KIT

THE Liberator bomber proved to be an excellent and reliable aircraft possessing good speed and range, but as always, the designers sought ways to improve the performance. The outcome was a considerably re-designed and aerodynamically improved aircraft. The modifications were extensive, so that to all intents and purposes it was a new aircraft. Consequently it was renamed and re-designated and became the Privateer.

With a little skill and patience, the Airfix Liberator kit can be converted to represent this very interesting aircraft, and the first step is to cut away the front portion of the fuselage halves following the lines of the drawing on the next page. This is done *before* assembly Cement the two rear halves together and allow to dry. The ball turret assembly is not required.

The front portion is next assembled following the kit instruction sheet but omitting the front turret transparency. If a piece of lead is glued in front of the cockpit bulkhead at this stage, the model will subsequently stand level without the need for support steps at the rear. Next glue a block of wood, inside the rear fuselage section with its front face flush with the edge of the cut, and then glue another piece of wood to the outside face of the bulkhead in the front fuselage portion. Use UHU for these jobs. Ensure that the block in the rear fuselage extends far enough back to fit beneath the top turret opening as it must provide a base for the body putty when the unwanted opening is filled.

The wood pieces in the front and rear fuselage sections now provide a key to hold the obechi insert marked on the drawing. Cut a block which is a little wider and higher than the fuselage to allow for sanding to correct cross-section later. Use UHU for the cementing job and leave the complete assembly at least 48 hours to dry. Then carve and sand the insert to match the fuselage contours. In between times, file away the astrodome housing from the nose and fill the resultant hole, plus the pitot tube locating holes, with body putty.

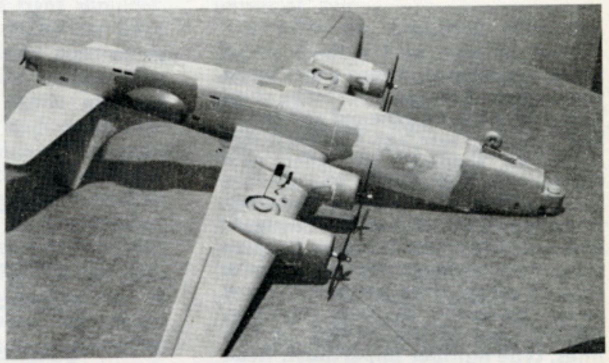
Assemble the wings and undercarriage to the kit instructions. Paint the engine interior details but omit the propellers for the time being. Cement the cowlings to the nacelles with the radiator intakes *vertical*, not horizontal as on the Liberator. When dry, file the nacelle sides to fit the new vertical cowl shape, and then cement a piece of 4 inch balsa sheet on top of the nacelles. Then, after filing away the turbo-supercharger, cement a further piece of balsa under the nacelles. Fill the resulting gaps in the sides with Brummer stopping. When dry, file and sandpaper the nacelles to the new shape.

Cut a new fin and rudder, plus two tail-plane halves, from ¼ inch balsa sheet. Sand to aerofoil section, not forgetting to taper these new items from root to tip from the front view. Fillet the fin to the fuselage with Brummer stopping or plastic wood and when dry, sand to a smooth joint. The tail-planes should have pronounced dihedral, with the tips 8 mm above the roots when seen from the front. Fillet these to the fuselage as for the fin. Brummer stopping is rather easier to smooth, I find, than alternative types of filler (plastic wood or putty, for instance) and has the virtue of not shrinking when it dries. This is very much a matter of choice, however. It is, of course, essential to score in fin and elevator hinge lines before the tail is assembled. All the wooden parts are given the usual treatment of talc/dope filler as often recommended in AIRFIX magazine; at least two coats are needed, sanding between each. Finish off with 0/400 wet and dry paper.

Make a new locating hole in the fuselage and fit a D/F loop fairing. Mould the two side blisters to the shape given, and also new gun turrets, from acetate sheet in the conventional manner, making moulds and formers from wood. Paint the appropriate fuselage areas before fitting these transparencies and then add the streamlined fairings ahead of the blisters after they are cemented in place.

The new front turret is made by carefully filing the base of

Continued on next page



Underside view of the partially completed conversion shows clearly the added wood insert in the fuselage, the modified engine cowls, the blanked off belly turret position and the added blisters. Note prominent dihedral on the new wooden tailplanes.

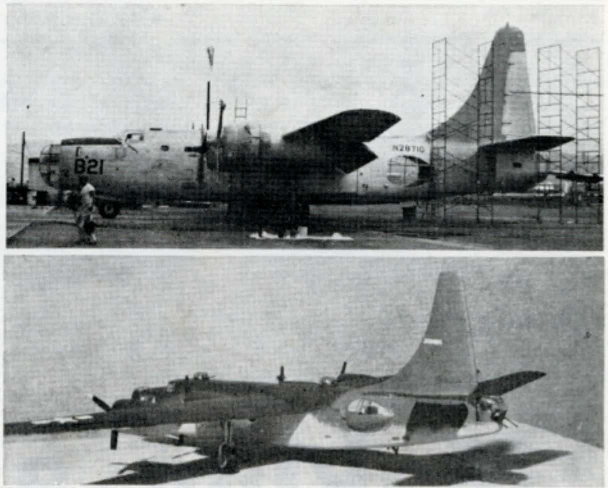
Privateer—continued

the ball turret transparency to fit the existing turret mount. Build up the sides with Brummer stopping, and when dry file to spherical shape. Fit the guns and cement the completed turret to the nose. The radar blisters are shaped up from scrap plastic or balsa and fitted in the positions shown on the drawing.

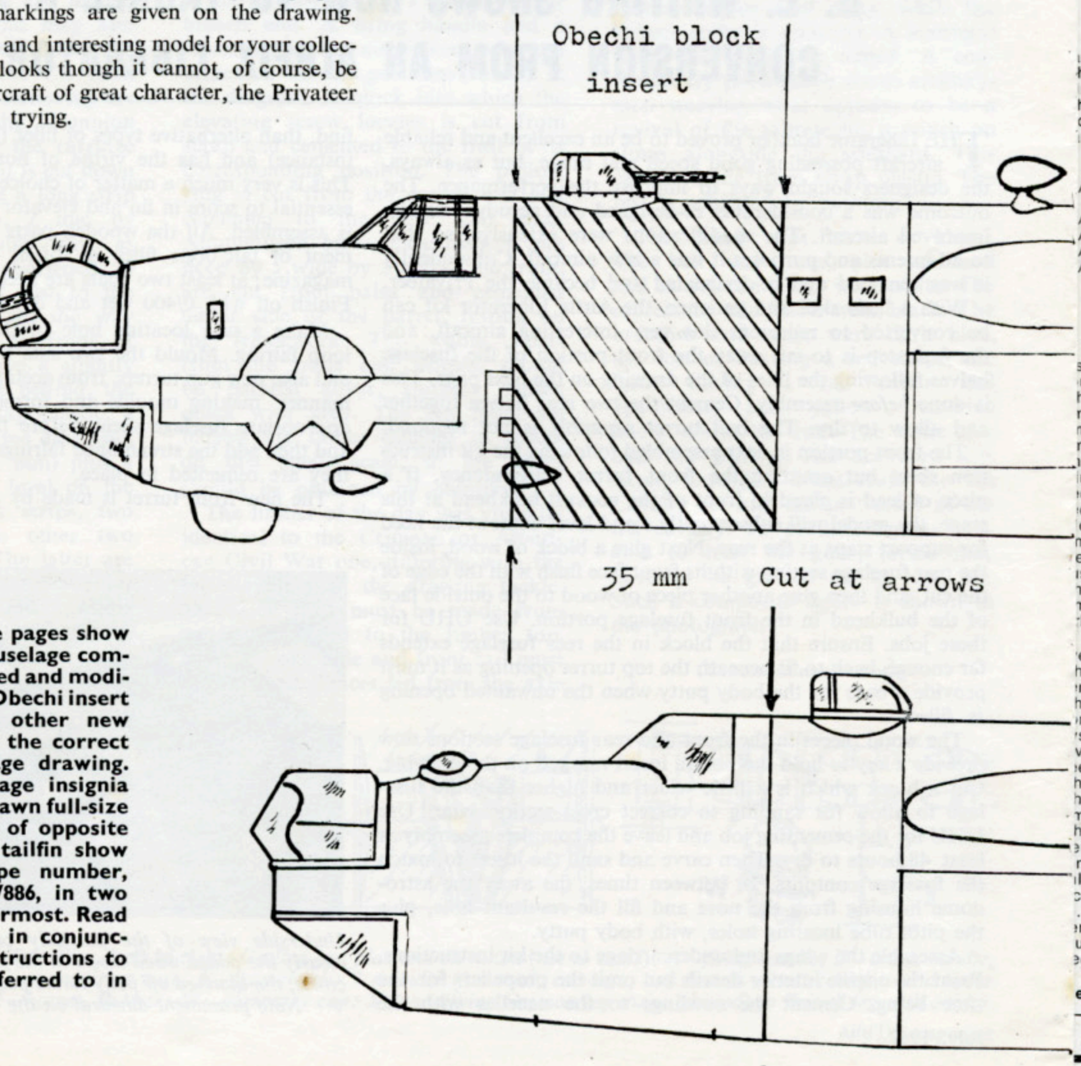
Colour scheme: As applied to my model this is the standard US Navy patrol finish of off-white under surfaces extending on to the lower fuselage sides as a wavy line. Fuselage sides are dark grey merging into patrol (or midnite) blue at the top of the fuselage and on upper surfaces. Fin and rudder were grey. I think the demarcation of the colours will be evident from the pictures. Use matt colours mixed with just a touch of gloss paint to give a slight sheen. Matt the transfers with wet and dry paper or pumice powder before application. The de-icer boots on wing leading edges are matt black, and the prop blades are also matt black with yellow tips.

Because of the engine modifications it is not possible to use the propeller retainers. Hence the props are merely pushed into place and can be cemented rigid if desired. My model is carrying spurious codes and serials, applied for photographic purposes, but genuine markings are given on the drawing.

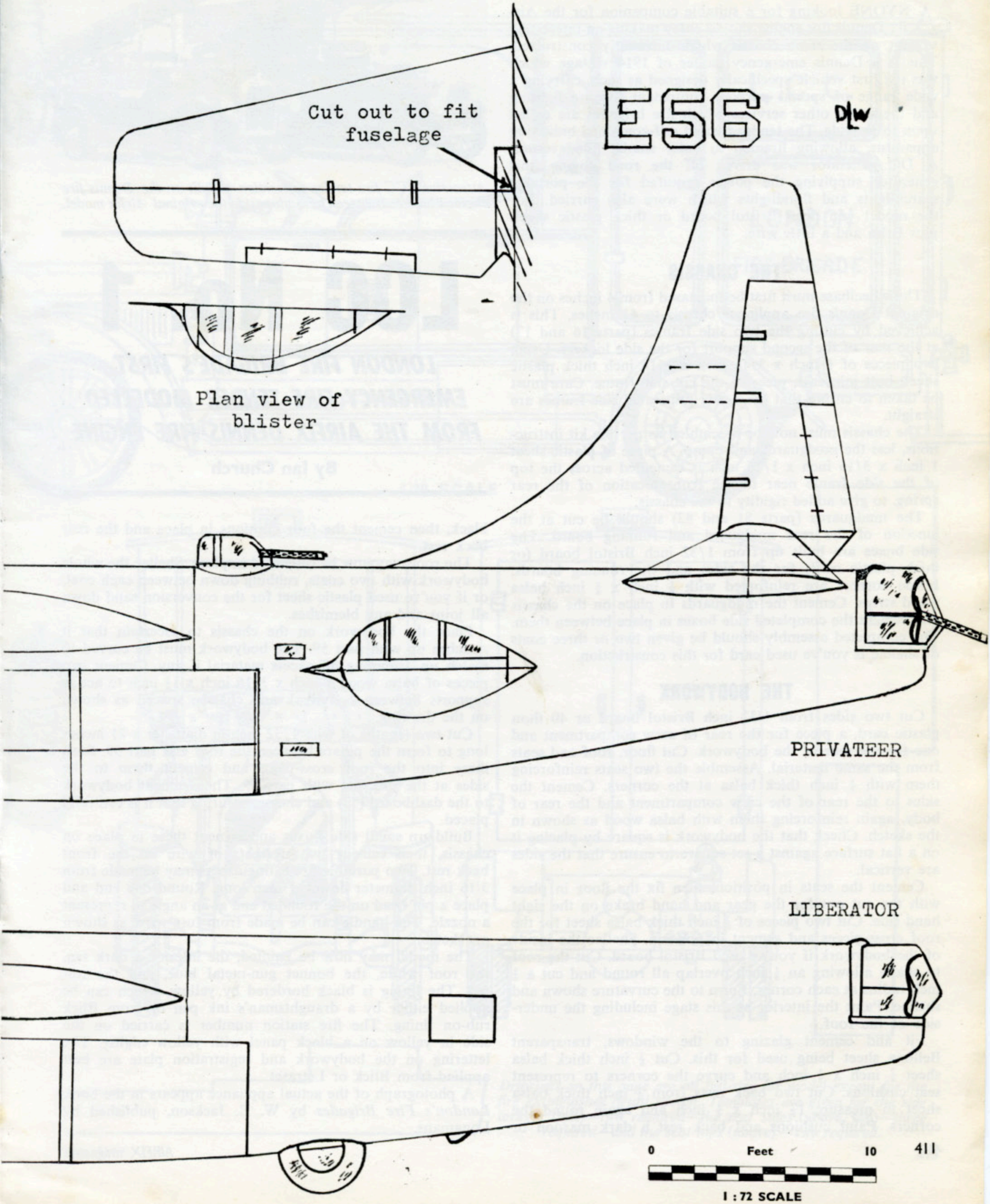
This is a very satisfying and interesting model for your collection, not as difficult as it looks though it cannot, of course, be rushed. If you want an aircraft of great character, the Privateer conversion is well worth trying.



Top: *Photopage picture submitted by E. Scott shows a much modified Privateer undergoing restoration by enthusiasts in America. Note that turret and blisters have been removed and replaced by fairings.* **Above:** *Another view of the model.*



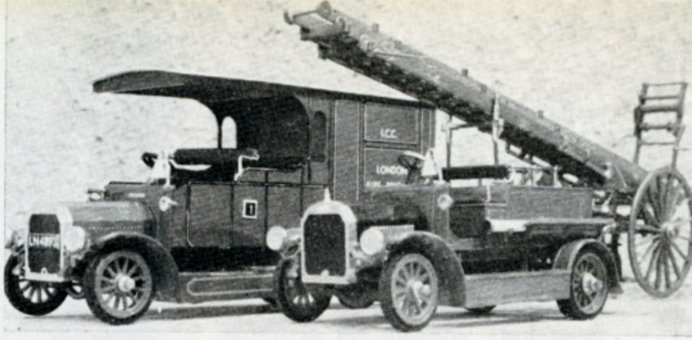
Scale drawings on these pages show the original Liberator fuselage compared with the lengthened and modified Privateer fuselage. Obechi insert is shown shaded and other new fittings are included in the correct locations on the fuselage drawing. Note position of fuselage insignia and code E56 which is drawn full-size in correct style at top of opposite page. Broken lines on tailfin show exact positions of type number, PB4Y-2, and BuNo, N7886, in two lines, type number uppermost. Read conversion instructions in conjunction with Airfix kit instructions to locate correct parts referred to in text.


Cut out to fit fuselage
E56
DW
Plan view of blister
PRIVATEER
LIBERATOR
0
Feet
10
1 : 72 SCALE

LCC No. 1

LONDON FIRE BRIGADE'S FIRST EMERGENCY FIRE TENDER MODELLED FROM THE AIRFIX DENNIS FIRE ENGINE

By Ian Church



Attractive LCC fire tender conversion is built on the Dennis fire engine chassis. It is seen here alongside the original Airfix model.

ANYONE looking for a suitable companion for the Airfix Dennis fire engine should enjoy making an interesting variant on the same chassis which I recently constructed. This is a Dennis emergency tender of 1914 vintage which was the first vehicle specifically designed as such, carrying a wide range of special purpose equipment for fire fighting and the many other services which fire brigades are called upon to provide. The tender carried self-contained breathing apparatus, allowing firemen to enter smoke filled rooms. A DC generator was driven off the road engine, this generator supplying the power required for the portable searchlights and floodlights which were also carried. For the model you need Bristol board or thick plastic sheet, plus balsa and a little wire.

THE CHASSIS

The wheelbase must first be increased from 4 inches on the original Dennis fire appliance chassis to 4¾ inches. This is achieved by cutting the two side frames (parts 16 and 17) at the rear of the second support for the side lockers. Using two pieces of ¾ inch x 3/16 inch x 1/16 inch thick plastic sheet, butt join each piece to the cut side frame. Care must be taken to ensure that the newly fabricated side frames are straight.

The chassis must now be assembled as per the kit instructions, less the mudguards and pump. A piece of plastic sheet 1 inch x 3/16 inch x 1/16 inch is cemented across the top of the side frame near to the front location of the rear spring, to give added rigidity to the chassis.

The mudguards (parts 81 and 82) should be cut at the junction of the rear mudguard and running board. The side boxes are built up from 1/32 inch Bristol board (or thick plastic card) for the sides and the running boards. Inside corners are reinforced with ⅛ inch x ¼ inch balsa wood strips. Cement the mudguards in place on the chassis and cement the completed side boxes in place between them. The completed assembly should be given two or three coats of shellac if you've used card for this construction.

THE BODYWORK

Cut two sides from 1/32 inch Bristol board or 40 thou plastic card, a piece for the rear of crew compartment and one for the rear of the bodywork. Cut floor, roof and seats from the same material. Assemble the two seats reinforcing them with ⅛ inch thick balsa at the corners. Cement the sides to the rear of the crew compartment and the rear of body, again reinforcing them with balsa wood as shown in the sketch. Check that the bodywork is square by placing it on a flat surface against a set square to ensure that the sides are vertical.

Cement the seats in position, then fix the floor in place with the cut out for the gear and hand brake on the right hand side. Cut two pieces of ⅛ inch thick balsa sheet for the roof cross-pieces and cement in position. Shellac the inside of the bodywork if you've used Bristol board. Cut the roof to shape allowing an ⅛ inch overlap all round and cut a ⅛ inch radius at each corner. Form to the curvature shown and shellac. Paint the interior at this stage including the underside of the roof.

Fit and cement glazing to the windows, transparent Bellona sheet being used for this. Cut ⅛ inch thick balsa sheet ⅞ inch x ½ inch and curve the corners to represent seat cushions. Cut two back rests from ⅛ inch thick balsa sheet to measure 1⅞ inch x ¼ inch and again round the corners. Paint cushions and back rest a dark maroon or black, then cement the four cushions in place and the rear back rest.

The roof may now be cemented in place. Shellac the whole bodywork with two coats, rubbing down between each coat, or if you've used plastic sheet for the conversion sand down all joins and any blemishes.

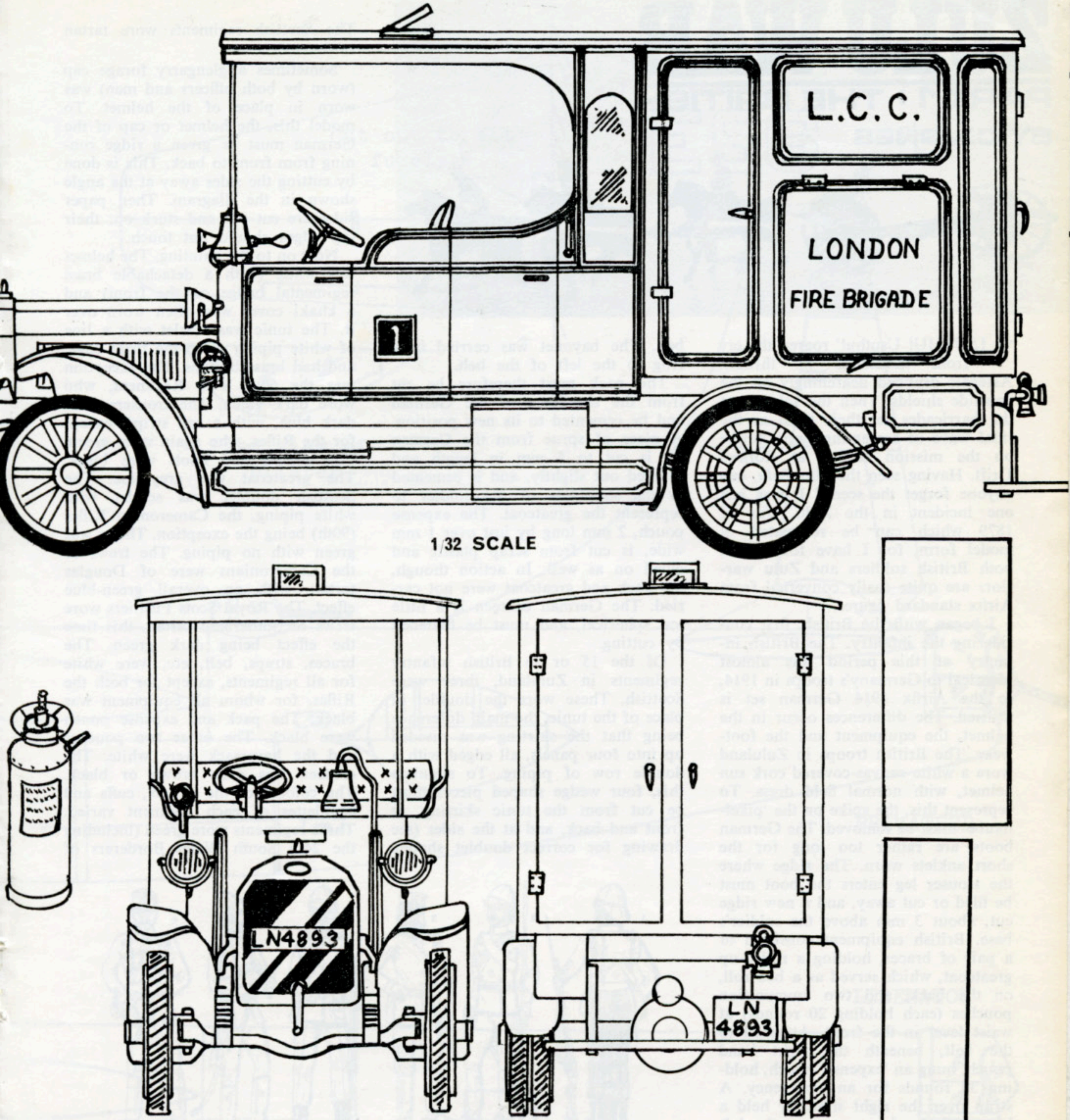
Place the bodywork on the chassis to ascertain that it matches up with part 59. The bodywork must be curved to match up, trimming off excess material if any. Cement two pieces of balsa wood ⅛ inch x 3/16 inch x 1½ inch to act as supports between bodywork and chassis, spaced as shown on the drawing.

Cut two lengths of wire 1/32 inch in diameter x 2¼ inches long to form the pillars between the roof and part 59. Push these into the roof cross-piece and cement them to the sides at the junction with part 59. Then cement bodywork to the dashboard (59) and chassis ensuring that it is centrally placed.

Build up small side boxes and cement these in place on chassis, then cement two uprights of wire on the front back rest. Two portable fire extinguishers may be made from 3/16 inch diameter dowel, ¾ inch long. Round one end and place a pin head on the rounded end at an angle to represent a nozzle. The handle can be made from fuse wire, as shown on sketch.

The model may now be painted, the interior a dark tan, the roof white, the bonnet gun-metal blue, and the rest red. The lining is black bordered by yellow, which can be applied either by a draughtsman's ink pen or from Blick rub-on lining. The fire station number is carried on the side in yellow on a black panel with yellow edging. The lettering on the bodywork and registration plate are best applied from Blick or Letraset.

A photograph of the actual appliance appears in the book *London's Fire Brigades* by W. E. Jackson, published by Longmans.



Drawings on this page are all full-size for model except for the fire extinguisher detail sketch. Templates are given for the side lockers **(left)**—*two required—the seat sides* **(above, top)**—*three required—and the seat tops* **(above)** *—two required.*

ZULU WAR

PART 1: THE BRITISH

BY C. JONES

'USUTHU! Usuthu!' roared the cry from thousands of throats. Assegais drubbed deafeningly on the cowhide shields. Then the soldiers at the barricades set their teeth as the tidal wave of screaming Zulus broke on the mission station at Rorke's Drift. Having seen the film *Zulu,* can anyone forget the scene? It was just one incident in the Zulu War of 1879 which can be re-created in model form, for I have found that both British soldiers and Zulu warriors are quite easily converted from Airfix standard figures.

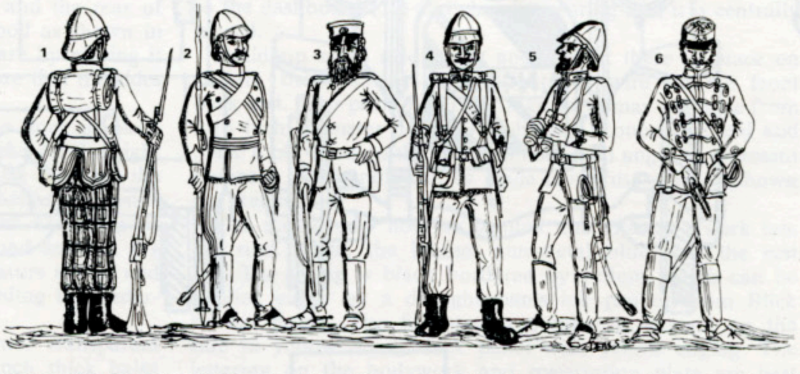
I began with the British, first considering the infantry. The British infantry of this period was almost identical to Germany's troops in 1914, so the Airfix 1914 German set is utilised. The differences occur in the helmet, the equipment and the footwear. The British troops in Zululand wore a white canvas-covered cork sun helmet, with normal field dress. To represent this, the spike on the 'pikelhaube' must be removed. The German boots are rather too long for the short anklets worn. The ridge where the trouser leg enters the boot must be filed or cut away, and a new ridge cut, about 3 mm above the soldier's base. British equipment consisted of a pair of braces, holding a rolled-up greatcoat, which served as a bed roll, on the back, and two ammunition pouches (each holding 20 rounds) at waist level in the front. Attached to the belt, beneath the right hand pouch, hung an 'expense' pouch, holding 30 rounds for an emergency. A strap over the right shoulder held a haversack for loose gear on the left hip, a narrower strap from the left shoulder to the right hip held a water canteen. From the ends of the braces in the front, straps led round to the back, holding the pack in an uncomfortable position there, below the belt. The bayonet was carried in a frog to the left of the belt.

The pack must therefore be cut from the shoulders of the German and be cemented to its new position. A piece of sprue from the German set is cut to 5 mm in length and thinned out slightly, and is cemented to the shoulders of the soldier to represent the greatcoat. The expense pouch, 2 mm long by just over 1 mm wide, is cut from scrap plastic and glued on as well. In action though, the pack and greatcoat were not carried. The German canteen is a little too spherical, and must be flattened by cutting.

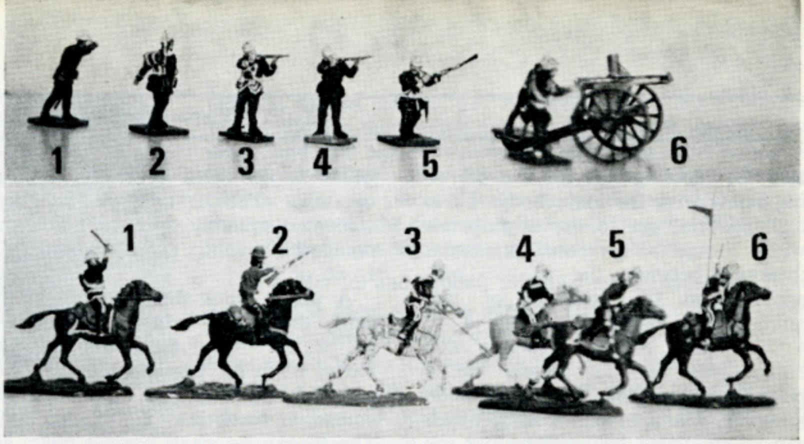
Of the 15 or so British infantry regiments in Zululand, three were Scottish. These wore the doublet in place of the tunic, the main difference being that the skirting was divided up into four panels, all edged with a double row of piping. To simulate this, four wedge shaped pieces must be cut from the tunic skirting, at front and back, and at the sides (see drawing for correct doublet shape). The Scottish regiments wore tartan trousers or trews.

Sometimes a glengarry forage cap (worn by both officers and men) was worn in place of the helmet. To model this, the helmet or cap of the German must be given a ridge running from front to back. This is done by cutting the sides away at the angle shown in the diagram. Then paper sides are cut out and stuck on; their top edges should not touch.

Now on to the painting. The helmet was white (with a detachable brass regimental badge on the front) and a khaki cover was often worn over it. The tunic was scarlet with a line of white piping down the front edge, and had brass buttons. The exception was the 60th Rifle Regiment, who wore dark green. The trousers were dark blue, with a red stripe, except for the Rifles, who again wore green. The anklets and boots were black. The greatcoat was grey-blue. The Scottish doublet was scarlet with white piping, the Cameronian Rifles (90th) being the exception. Theirs was green with no piping. The trews of the Cameronians were of Douglas tartan, with an overall green-blue effect. The Royal Scots Fusiliers wore trews of Sutherland tartan, this time the effect being dark green. The braces, straps, belt, etc, were white for all regiments, except for both the Rifles, for whom all equipment was black. The pack and expense pouch were black. The other two pouches and the haversack were white. The canteen was dark brown or black. The colours of the collars, cuffs and epaulettes of each regiment varied. Three regiments wore green (including the 24th South Wales Borderers of



Above: *Uniform details for the Zulu War period.* **Key to numbers:** (*1*) *Private, Royal Scots Fusiliers showing equipment less pack.* (*2*) *Trooper, 17th Lancers.* (*3*) *Volunteer, Irregular Horse Unit.* (*4*) *Private, Infantry regiment.* (*5*) *Officer, Royal Artillery.* (*6*) *Infantry officer in patrol jacket and forage cap. Colours given in text.* **Heading:** *7 pounder field gun and team from the Airfix US Cavalry.*



Top row: *Infantry and artillery figures. (1) Officer in patrol jacket and helmet. (2) Marching infantryman. (3) Private, Royal Scots Fusiliers in trews (4) Rifleman, 60th Rifles. (5) Infantryman. (6) Gatling gun modelled as described, with Royal Artillery crew.* **Above:** *Cavalry conversions. (1) Officer of KDG. (2) Trooper of Frontier Light Horse. (3, 4, 6) Troopers of 17th Lancers. (5) Mounted officer, KDG.*

Rorke's Drift fame), three blue, two yellow, two white and two buff. The 60th Rifles wore scarlet while the Cameronians had theirs the same colour as their doublet. Above the cuff was an 'Austrian knot' of white tape. The sling of the breech-loading Martini-Henry rifle was white.

The sergeants were uniformed identically to the men, but wore a crimson sash over their right shoulder. The infantry officers wore either the scarlet tunic (plus crimson sash over the left shoulder, blue trousers, and anklets and boots) or the patrol jacket, as illustrated. The patrol jacket was generally dark blue, but the pattern and shade of the 'lace' (tape or cord) varied from regiment to regiment. Most commonly it was blue, a shade lighter than that of the jacket itself. Many of the officers were mounted, and so wore breeches, either blue with a red stripe or buff coloured. The boots were generally black. The headgear was either the topi, the glengarry, or the forage cap illustrated, which had a blue crown and a red band, bearing a white regimental number. Equipment was a sword, a revolver, an ammunition pouch and often field glasses. The officers from the German, US Cavalry and Artillery sets will do. The forage cap can be made by straightening out the sides of the tapering German forage cap with a knife, and cementing a paper peak into a groove cut along the front with a file.

Only two regiments of British cavalry rode into Zululand with the main column during the second invasion. They were the 17th (Duke of Cambridge's Own) Lancers and the 1st (King's Own) Dragoon Guards. The US Cavalry are used to depict them. First the trooper's head must be cut off, and the open neck collar removed by cutting. Then the cartridge-belt or bandolier is filed flat, and the large buckle at the back removed. The tunic skirt below the waist is represented by removing all detail from that area, by cutting. Next, the rolled-up sleeve projections are cut away and a 1914 German's head is stuck to the trooper's shoulders, after cutting off the spike, to represent the helmet.

The lancers charged with levelled lances. They were 9 feet in length, and can be made from 40 mm lengths of wire. Each carried a two-tailed pennon, just below the lance tip, cut from paper, and 8 mm long. The more meticulous among you will add a tiny disc of paper, about 2 mm from the lance butt, to represent the stop. The lance arm of most of the US troopers will have to be cut off at the elbow and reset at a new angle so that the lance will be level. At close quarters it was out sabres, and the lance was slid up the arm by means of the wrist strap until it rested upright, half way between the elbow and the shoulder, with its butt in a frog on the stirrup leather.

The lancers' tunic and breeches were dark blue. The tunic was edged with white piping, the collar and cuffs were white too. The breeches bore two white stripes down the outer seam. Two white cross-straps were worn, and the girdle was yellow, with two red stripes. The helmet was white, the boots black, the lance-pennon red above white. The KDG wore a scarlet tunic with blue cuffs and collar. The breeches were dark blue and the single stripe on them was yellow. The strap which passed over the left shoulder was white, as was the belt. A much narrower black strap passed over the right shoulder. Like the lancers, the KDG carried a black pouch in the same position as the original bandolier buckle. The scabbard-slings were white and the scabbards silver for both regiments.

About 27 cavalry units of European volunteers rode with the British army. Some had been formed on the tough civilians' (of Natal) own initiative, others were raised specifically by our officers. Some units were rather casual, but others built up reputations of great dash and courage. Their main use was as scouts and as far-flung flanking parties. One of these crack units was Major Buller's Frontier Light Horse. At the beginning of the war, they wore black corduroy tunics and breeches, the latter with a red stripe. The headgear had been a slouch hat with a red puggaree wound round the crown. Before long, however, anyone with a horse and a rifle was accepted for service, only the distinguishing red cloth on the hat being required. This applied throughout the volunteer horse units, which varied in strength from about a hundred to about three hundred men.

The US Cavalry is utilised. The headgear was either the peaked cap, the topi, the pill-box or the slouch hat. The bandolier can be left as it is, erased entirely, or flattened down by filing to represent the black or white cross-strap. Many volunteers managed to procure a military looking tunic, which was red or blue, but many came in their every-day jackets, which would be of any colour of cloth, most commonly brown or green. Breeches or trousers were worn. For the latter, the ridge of the boot must be cut away. The sabre was carried by some units, but the rifle (Snider or Martini-Henry) was the universal rule.

In 1879, the transition from the muzzle loading field piece to breech loaders was only half completed. In the range of heavy artillery, the muzzle loaders were to hold their own for a long time yet. All the guns taken to Zululand were light, the absence of roads and abundance of dongas (gullied water-courses) necessitating this. In all, there were about 20 guns, 7 or 9 pounders, divided up among the three columns of the invasion force. For the 9 pounders, a 2 mm strip, 20 mm long, is cut from the centre of the trail, taking care to leave both the pulling ring

Continued on next page

and the locating slot for the elevating screw with the main body. Three trail spacers, cut to the appropriate width should be cemented at regular intervals between the trails. Then, apart from the addition of two ammunition cases, measuring 4 × 4 × 4 mm, cemented to the axle either side of the barrel, the 9 pounder is complete. The 7 pounder, however, was a breech loader, which can be modelled by carrying out the above modifications and by adding a twisted piece of wire to the breech button to represent the handles by which the breech block was screwed in.

As well as the field guns, seven Gatling guns, mounted on British carriages, which were similarly divided among the columns, make an interesting addition to any modeller's miniature army, and may also be of some interest to the American Civil War enthusiast. The US Civil War piece is taken, and removing the barrel and wheels, the trunnion sockets are cut off and the carriage surface filed flat. The trail is cut down to 27 mm in length, and a long strip is cut from its centre, 2 mm by 20 mm, leaving a double trail, as before. The barrel is shortened to 22 mm. A ridge is cut just to the front of the trunnions, all the way round, and the barrel in front of this is filed down to have a slightly smaller diameter to that behind, the breech casing. From scrap plastic, a supporting pillar is cut (see diagram), a platform (4 mm by 7 mm) plus a small wedge to keep it level on the sloping trails, and four strips, two measuring 20 mm, the other two being half that length. The latter are assembled to form a rectangular framework, the shorter pieces fitting inside the longer ones. The platform plus wedge is cemented on to the foremost part of the carriage, and the pillar is cemented centrally on top of that. The framework is then cemented squarely over the platform, on to the axle, to protrude 6 mm in front of it.

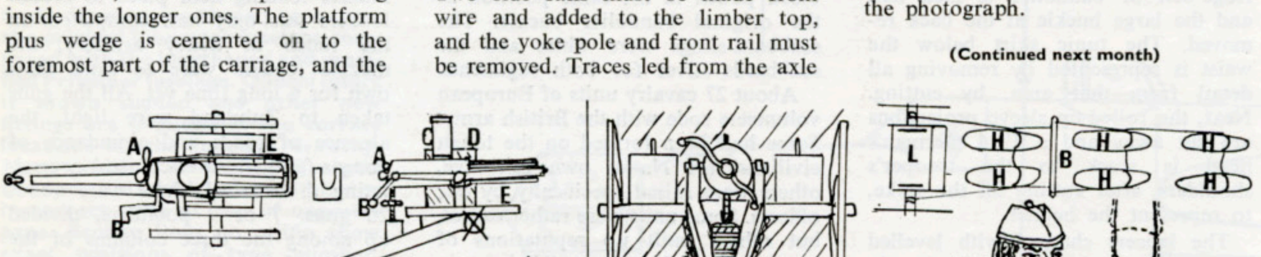
A pin is stuck through a sliver of card, the latter being long enough to project from the sides of the barrel when the pin is centred on the muzzle end. The pin, shortened of course, is stuck into the muzzle end. The trunnion sockets are cut down as small as possible, then pressed on to the trunnions. Narrow (1 mm) strips of card are cemented from the sliver across the front, along the outsides of the trunnions and to the breech casing (see diagram). Then the trunnion sockets are cemented to the uprights of the pillar. A magazine from a 5 mm length of sprue is stuck to the breech casing, 7 mm from the breech end. A firing handle and a crank handle are made from wire and cemented in the positions shown in the diagram. A block into which the elevating screw locates is cut from scrap and cemented to the trail in its corresponding position. The pulling ring is cut from the cut-off end and cemented to the new trail ends. Ammunition cases, measuring 7 mm deep by 5 wide by 3 across the front, are cut from balsa and cemented either side of the barrel, resting on the framework. The whole, apart from the trails and wheels, should be painted silver, suitably dulled down with grey. The ten revolving barrels are rather difficult to model on this small scale, so the effect should be obtained by painting.

The limber of the day was virtually identical to the Crimean or American Civil War one, differing with the latter mainly in the drawing tackle. Two side rails must be made from wire and added to the limber top, and the yoke pole and front rail must be removed. Traces led from the axle between the limber side and the wheel to the yokes of the first pair of horses, from there to a beam in front of the first pair, from the beam to the second pair's yokes, and from them the pull was transmitted directly to the leading pair's yokes. Each horse was linked to its partner by connecting harness. For the limber and harness, refer to the accompanying diagram and to the April article in this magazine.

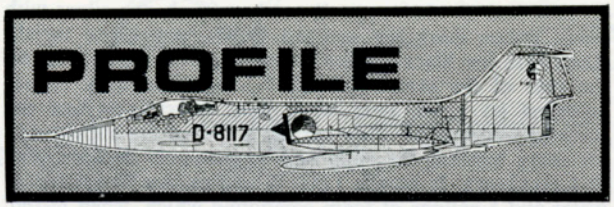
Finally we come to the Royal Artillery uniforms themselves. They wore the helmet, tunic, breeches and boots, and had a cross-strap from the left shoulder to the right side, and a belt, carrying a sword. The figures are modified from the 1914 German set. All external equipment, excluding a left to right strap and the belt is cut or filed away, while the helmet spike is removed. A scabbard from card must be added. A contemporary photograph shows artillerymen wearing what appears to be a revival of the sabretache, a pouch on slings alongside the scabbard. This can be made from scrap plastic. The rest is achieved by painting.

The helmet was white or khaki. The belt and strap, plus scabbard and sabretache slings were white. The sabretache and boots were black. The breeches and tunic were dark blue, the former bearing a red stripe, the latter having a red collar and epaulettes, and yellow 'Austrian knots' above the cuff. The tunic also had red piping. The scabbard was silver. Outriders come from the US Cavalry set and are converted as for the cavalry. To produce figures suitable to man the guns, torsos may have to be grafted on to legs, etc. Such a composite figure is shown in the photograph.

(Continued next month)

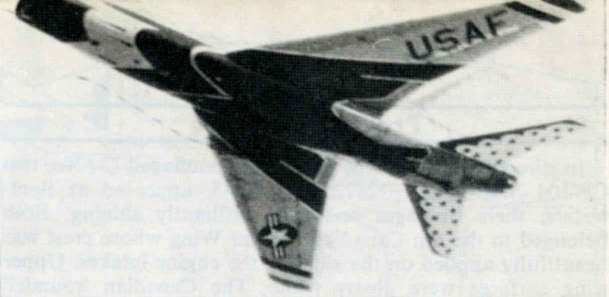


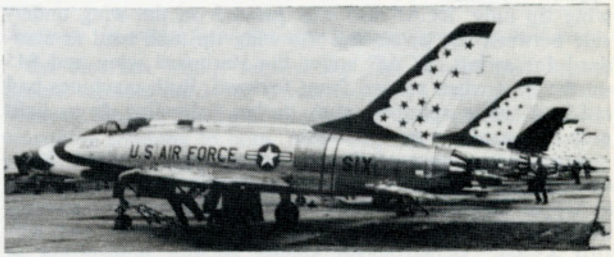
Guns and equipment of the Zulu War. **Left to right:** *Gatling gun plan and elevation (not to scale): A—firing handle, B—crank handle, C—revolving magazine, D—ammunition case, E—framework; 7 pounder gun trail, carriage, and breech details; limber and horse team layout: L—limber, H—horses, B—bar; W—glengarry cap; X—modifying German leg shape (dotted) to British leg with anklet.*



Armed Forces Day, 1967

AMERICAN Armed Forces Day Shows are an eagerly awaited part of the aviation calendar, and can always be depended upon to provide something new despite this age of contracting numbers of aircraft and less money for prestige events. This year's displays were well supported by the RAF, and there was plenty to satisfy modellers looking for new finishes, for eager photographers and, indeed, for the army of collectors with specialised interests. For the purposes of our survey we attended three displays, those held at Bentwaters, Lakenheath and Mildenhall. The following survey is supplemented by what we hope will prove useful points relating generally to current day military aircraft markings.





Top: *No 6 of the 'Thunderbirds' races low overhead revealing the 'Thunderbird' motif.* **Above:** *The F-100Ds of the 'Thunderbirds' lined up at Lakenheath. The 'black' tailed machine has, in fact, suffered from heat scorch.*

A year ago the Americans presented us with their camouflaged fighters and transports. Since then photographs have shown camouflaged helicopters and B-52 bombers for day and night operations over Vietnam. Effective camouflage is not merely a matter of 'slapping on' paint to any old *ad hoc* pattern in any handy material in a colour that takes the fancy. During the war years a team at Farnborough existed entirely to exploit camouflage, both to render aircraft invisible from the air and to make them invisible once airborne. A further aspect always considered is the attempt to break up the outline of airborne aircraft. For example, in the case of the Mosquito in the war years, attempts were made to deceive the enemy as to its role by applying fighter camouflage to bombers and even to paint one in such a way as to make it resemble a Spitfire!

This partly explains the curious colours and patterning now applied to many USAF aircraft. At Bentwaters the F-4C Phantom IIs of the 81st Tactical Fighter Wing were again on show, many retaining gull grey and white finish, usually with very dark blue serials and lettering—not the black so commonly supposed. What was immediately evident was the discoloration of the light official brown ('tan'), a sandy light brown when originally applied. The Phantoms are finished in epoxy enamel which seems to have faded to a grey shade of super-matt fawn, possibly in part due to low flying over the sea and certainly to natural weathering. But it is now a far change from the tan of a year ago. Phantoms wearing this murky colour along with green and dark green included 64-882A/40882 and 40893. No unit markings were carried by any of the F-4s seen, and the camouflaged ones had black serials. 64-884A/40884 an F-4C-25-MC was exhibited in Bentwaters static park surrounded by possible weapon loads, dull dark green bombs and white missiles including Bullpups and Sparrows. A rocket pod for spinning unguided rockets was shown, but the most interesting object seen was a huge rotating-barrel cannon housed under the centre of the fuselage in an irregular shaped container like a drop tank.

Camouflaged F-100s are common now and wear the usual 30219 tan, 34102 green, 34079 dark green, and 36622 grey (almost white) colours. Gone are squadron and wing markings on these machines and the natural finish aircraft. The tan shade on these seems to have retained its original tonal qualities. F-100D-86-NH O-63422 typified the latest colouring. USAF bombers and helicopters wearing camouflage have yet to appear in Britain, but camouflaged Lockheed C-130E transports are comparatively common. Many were seen at Mildenhall. Open for inspection was C-130E-75-LM 62-1084, support aircraft for the Thunderbirds Aerobatic Team. Its camouflaging had been completed on Feb 13, 1967, and on the port side of its nose appeared the team's motif. The nose radome was overpainted green as usual, and the camouflage extended to a wavy irregular ending under the wings and fuselage and tailplane. The rear of the engine nacelles and adjacent wing areas were glossy white, painted in a special enamel protecting the surfaces from exhaust searing. C-130E, 40537, was open for inspection at Mildenhall, home of 513 TCW—part of the 322nd Air Division—which provides assault airlift in support of USAF commitments and which moved here last July from Evreux and Chateroux. It flies two squadrons of C-130s and was busy supporting a major exercise in Spain during Mildenhall's 'open house'. Two TAC rotational squadrons are assigned to the 513th for 90 days temporary duty from the USA, incidentally, and another MAC squadron likewise is detached to Rhein/Main to man the C-124s there.

There were slight differences in the camouflage patterning of the C-130s. 21804 had tan serials with USAF above on the fin, 40525 had small black fin serials with USAF above, and 40512 merely had a small black fin serial. A few silver machines were also around

Continued on next page

Profile—continued

In direct contrast to the sombre camouflaged C-130s, two CF-104 Starfighters, 12822 and 12845, appeared at Bentwaters, their fuselages and tails brilliantly shining. Both belonged to the 4th Canadian Fighter Wing whose crest was beautifully applied on the sides of the engine intakes. Upper wing surfaces were glossy white. The Canadian 'roundel' appeared on the sides of the nose and above the starboard wing tip only. RCAF 845 was painted on the wing underside between the pylon and the wing tip tank read as standard for serials, RCAF under the starboard wing and 845 on the port when viewed front forward. Both machines had red and white spiralled nose probes extending from light grey (not green) nose radomes.

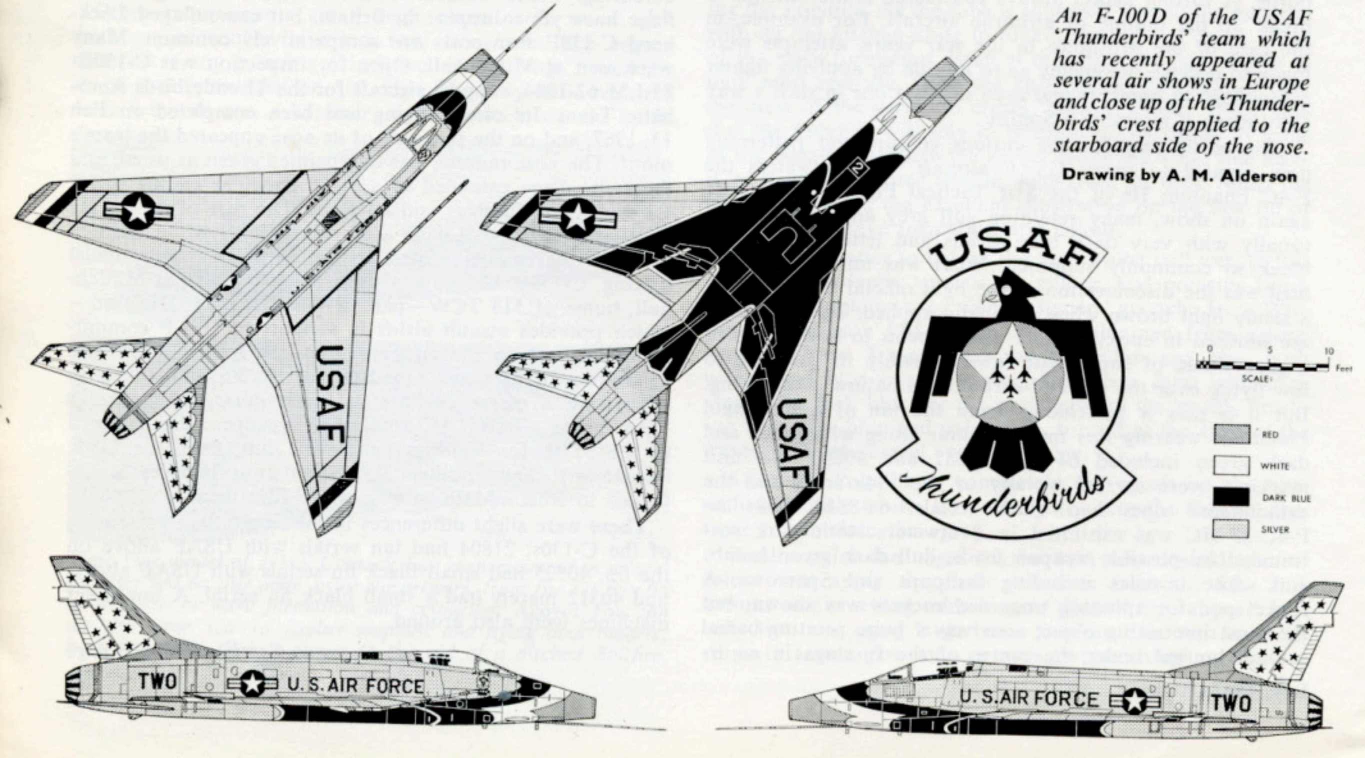
After many years of fleeting appearance, RF-101C Voodoos have at last found a home in Britain, being now based at Upper Heyford. RF-101C-60-MC 56-0210/60210 in dirty dull natural metal finish appeared at Bentwaters, and RF-101C-65-MC 56-060/60060 almost equally uninspiring at Lakenheath. One-time Wing markings were faintly visible on the fin radiating from a crest, but 60060 had blue and white nose insignia wearing off, and recalling its successful participation in the USAF FIGHTER WEAPONS MEET as 1st Place Unit in 1962. 60060 had black lettering and serials apparently repositioned on this and the other aircraft, and blue under-belly FB-060 buzz-lettering. A more interesting Voodoo was O-60070 (an RF-101C-MC) which came to Mildenhall. Its finish was original tan/green/white-grey, and nose camera bay doors opened to show the valuable lenses pointing sideways, downwards and obliquely. Above the black fin serial was AF, also in black.

A highlight of the shows was the appearance of the Kaman HH-43B Husky rescue and fire-fighting helicopter which, I felt, would make an ideal model subject because of the bits and pieces protruding from here and there, and the amazingly placed rotors which so strangely intermeshed. 62-4536 (constructor's number 162) accepted Feb 27, 1963, 59-1566 and 59-1564 were all on show, each one silver with black rescue markings outlined yellow, and black serials. They bore the black, yellow, white and blue MAC crest on the rear of the centre pod-like fuselage, had dirty bronze coloured jet pipes, twin black nose searchlights and red warning inscriptions. They carried a special fire suppression kit slung beneath the belly and impressively demonstrated at Lakenheath. It weighs 1,000 lb and carries 78 gallons of water and 5 gallons of foam compound which, when mixed, is expelled from 150 feet of hose as 7,000 gallons of foam.

Other Base Support aircraft seen were mainly C-47 'Gooney Birds' which, despite their age, were in immaculate condition. Basically they had glossy light grey upper and lower wing and tailplane surfaces, light grey fuselage under side, and white fins and rudders. Cheat lines and lettering were dark blue. O-76304 was used by the Blue Masters team at Bentwaters and O-76600 was there too. Mildenhall's C-47s included 77214, O-48343 and O-50943.

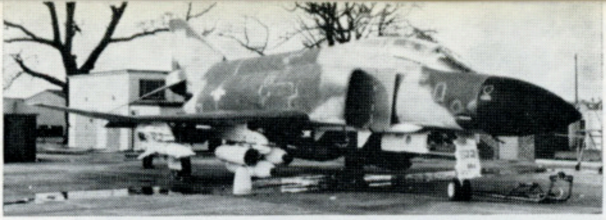
Hangared at Mildenhall was C-47J 17276 similarly painted to the C-47s of the USAF, but it displayed the Stars and Stripes flag painted across the tail and under the port wing tip. With it was C-117D 50821 'Super Gooney' also operated by the US Naval Air Facility, Mildenhall. It had tail and wing flags as well as national insignia and MILDENHALL in black across the fin and rudder and above the starboard wing tip. With these two was a Beech UC-45J 'Bugsmasher' 9909/39909, white with red trim, and '909 MILDENHALL' in black across the fin and above the starboard wing tip. Gone are the days of the T-33 'T-Birds' and now most bases operate a T-39 Sabreliner for communications purposes. These conform to the usual white/silver finish once adorning C-47s, and included T-39A-1-NA 24469 at Bentwaters and 24472 at Lakenheath.

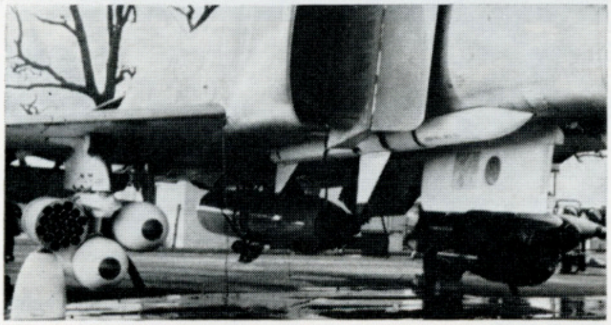
Markings-wise the most interesting feature of this year's shows was the appearance of 46 Squadron's Andovers finished in glossy dark brown and stone camouflage with glossy black under surfaces. 46 Squadron aircraft have a white fin disc supporting three red arrowheads and outlined blue.

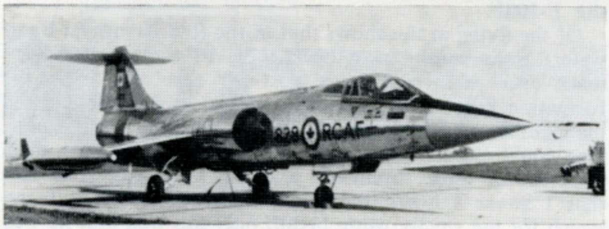


An F-100D of the USAF 'Thunderbirds' team which has recently appeared at several air shows in Europe and close up of the 'Thunderbirds' crest applied to the starboard side of the nose.

Drawing by A. M. Alderson







Top to bottom: *F-4C-25-MC 40884/64-884A of the 81st Wing in its two tone green and faded tan camouflage, and carrying an assortment of weapons. A close-up showing the three pods each for 19 rockets, the belly mounted missile and centrally slung rotary-barrel cannon in a grey container, and dark green bomb cluster under the starboard wing. RCAF CF-104G Starfighter 12828 at Bentwaters.*

White serials appear ahead of the fuselage marking and below the wings, and the 'last 3' appears in white above the fin flash. The red-white-blue roundel is painted above the port wing tip only. Beneath the starboard wing is the unusual blue and red roundel, a throw-back to the war years. A few Beverleys wear these colours, and Argosies of Transport Command are being similarly painted. Already the Lockheed C-130K Hercules transports, which began to arrive in Britain in natural finish at the end of last year, are emerging in similar glossy colouring, although they do not yet carry the 'last 3' on their tails. 'Painting' these machines is something of a misnomer, for they and the Andovers are virtually treated to a plastic coating, of polyurethane laminate finish. Its chip-proof, stain, heat and scratch resistant qualities render it ideal for these transports with a global role, but it needs to be applied under specially controlled conditions and temperatures. In the case of the RAF Hercules one most unusual feature is exhibited, for they bear the white under-wing serial like XV184 on the outer wing panel *outboard* of the blue and red roundel of the starboard wing, an almost unique feature.

On arrival the C-130s have bare metal finish with RAF roundels above each wing, side roundels, fin flash and small black serials painted immediately aft of the roundel. Only XV176, still in natural finish and used by Lockheeds for trials seems, amongst the silver machines, to have underwing serials. Originally there was apparently an intention to paint the aircraft grey-green-silver, but now the glossy browns and black are in vogue, although rumours speak of possible matt finishes for the future.

At Bentwaters the Royal Air Force Aerobatic Team, The Red Arrows, gave possibly their finest show ever. This year they fly the same Gnats but the markings on the aircraft are slightly changed for now their fins are striped entirely red-white-blue.

There has apparently been no further sign of glossy grey trainers in public, although plenty of silver Jet Provosts were around for the Armed Forces Day Shows. One of the reasons favouring natural finish—particularly for high speed aircraft—is that if there is no paintwork any signs of metal fatigue show more clearly. This is probably the main reason why RAF Lightning squadrons were instructed to remove their colourful spine and tail markings. XP700, the Mk 3 'Z' of 111 Sqn shown at Mildenhall, typified the modern style of Lightning trim, with Treble-One's glossy black nose lightning flash outlined by a one inch wide yellow stripe, and a small edition of the black cross, red scimitars and yellow swords on a small white fin disc. If the serial of this machine seems familiar to you it is probably because this is the aircraft pictured some months ago intercepting a nosey Russian bomber over the North Sea. Then it bore the markings of 74 Sqn and a black A on its fin, and traces of this and the squadron colours were still visible.

A new Lightning marking to look out for is 29 Squadron's. At the time of writing this unit has recently returned from Cyprus and has only received one T Mk 5, XV457, coded Z in black, and has its nose roundels flanked by white rectangles outlined red and each carrying three red crosses in 29's traditional style. Other Mk 3s at the shows included XP736:F and XP705:K both of 23 Sqn, marked as illustrated in our issue of August, 1966.

Within the regulations for the painting of the Jet Provosts there remains some latitude embracing the precise placing of the dayglo strips and unit lettering. 3 FTS Leeming applies letters and numbers on the fuselage sides above the mainplanes as well as at the fin tips and on the outer flap ends—a common practice. No 6 FTS, having encountered trouble with letters peeling off into the engine intakes,

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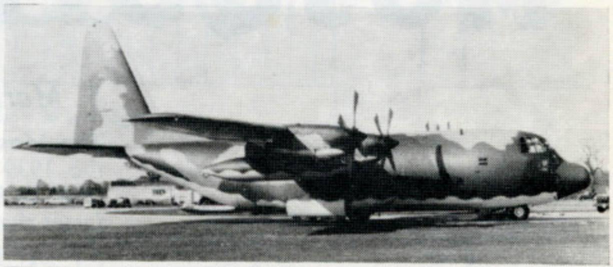
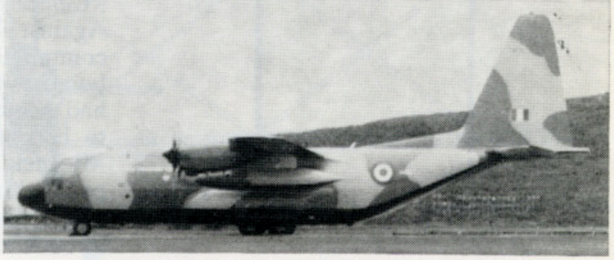




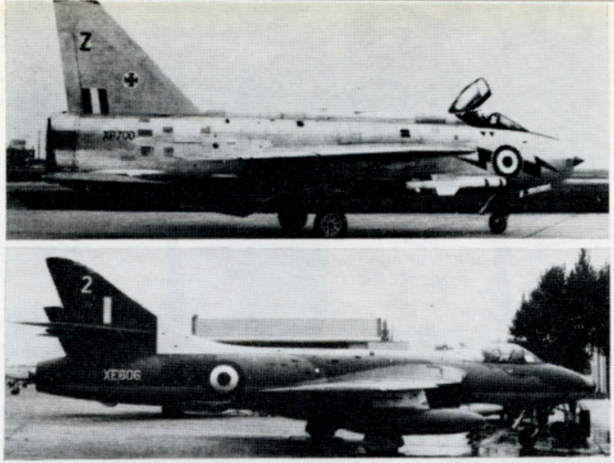
Above: *Contrast in colour schemes; C-130E-75-LM, 62-1804/21804, is the support aircraft for the 'Thunderbirds'. It has the crest shown on the opposite page on the port side of the nose. The other Hercules is a C-130K, XV183, of the RAF in two tone brown with glossy black undersides. Lettering and cabin roof are white.*

Profile—continued

applies its numbers to the intake sides as well as to fin tips. 1 FTS and the College of Air Warfare have theirs on noses and fin tips as well as on flaps. Examples of the former seen at Lakenheath included XR657:37 and XP627:400.

For most enthusiasts at the displays there can be little doubt that the most noteworthy items were the F-100s of the Thunderbirds team and the EC-135 which made a smokey take-off at Mildenhall. The latter, silver with white fuselage roof and vertical tail surfaces, had dark blue fuselage lettering and fin numbers. Its white engine pods and pylons carried light blue flashes, and there were additional radio masts on the fuselage roof and spear-like projections mounted above the wing tips. The US flag was painted across the fin and rudder. This machine was one of three similarly marked that could be seen on the field, and they formed part of the 7120th Airborne Command Control Squadron which provides an airborne command platform in support of EUCOM's Silk Purse Control Group.

One of the Thunderbirds' F-100s is illustrated diagrammatically. Basically this is the Skyblazers team re-named and adorned, in addition to the stars on the tail and the red-white-blue nose stripes, with a very dark blue 'Thunderbird' motif beneath the wings which it dominates. F-100Ds are now used in place of the F-100Cs. What the team appeared to lack in aerobatic brilliance and discipline when compared with the Red Arrows it made up for with its beautifully painted Super Sabres. By their cockpits they have painted the flags of all the many nations in which they have performed. An almost unique feature is the complete absence of external serials on the aircraft on nose or tail. Instead they carry their machine-in-squadron number in words, NINE being the F-100F.



Above: *Lightning XP700, Z of 111 Sqn, and Hunter XE606 from Chivenor with white spine and markings.*

Of the flying at the shows that of the Red Arrows at Bentwaters must surely have been some of the finest display work ever performed by a post-war aerobatic team, the formation keeping being as near perfect as possible and the manoeuvres immaculately performed and many quite new. One could almost feel the perspiration that must have been on some of those foreheads, and one Gnat passed so low that I swear I heard the pilot breathing. At least, I can vouch for the smelly white breath only too well that he was pushing out from his Gnat. One could feel proud that the RAF was its own unexcelled self, free of pestering politicians—which should always be the case!

Michael J. F. Bowyer

MOSQUITO

F. Martin Sharp and Michael J. F. Bowyer

The Mosquito was the non-conformist among aircraft of the 1939-1945 war. Conceived by de Havilland and his team to be a bomber and reconnaissance aeroplane flying faster than contemporary fighters, it had no need for defensive armament. Wood construction was proposed so as to employ an unpressed industry.
Against the indifference of an officialdom that was already committed to a national programme of armed heavy bombers the idea was persistently argued until, after war had begun, it was allowed to proceed as an experiment—to become an outstanding contribution to Allied victory. Michael Bowyer and Martin Sharp have collaborated in painstaking research to produce perhaps the most penetrating history of its kind, its subject one of the most interesting aircraft of the first half-century of aviation. With 138 photographs, 31 maps, diagrams, charts and 2-colour charts.
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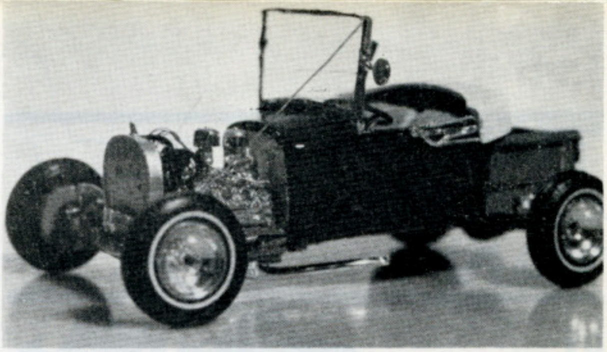
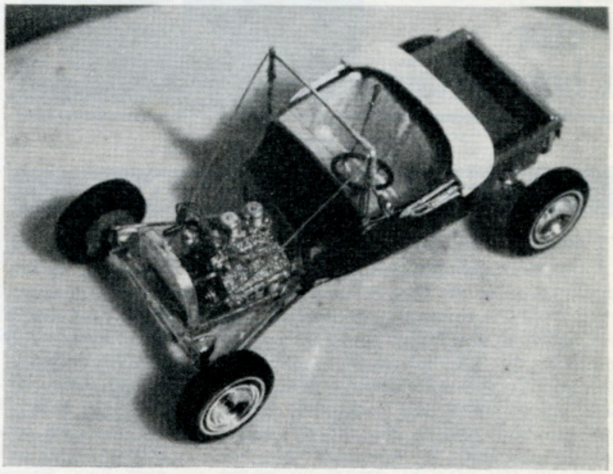
Hot rod Ford

By A. R. Vernon





AFTER each of my Airfix 'Elite' series scale car kits was built, I found that I had an ever increasing stock of spare parts left over, so when the Airfix-MPC 1929 'Woodie' Ford appeared with the alternative pick-up body, I decided to embark on a model 'hot rod' utilising as many of the spares as I could from previous kits. As many readers have requested an article on 'hot rod' modelling, this particular 'Hot' Ford should prove an easy introduction to the subject.

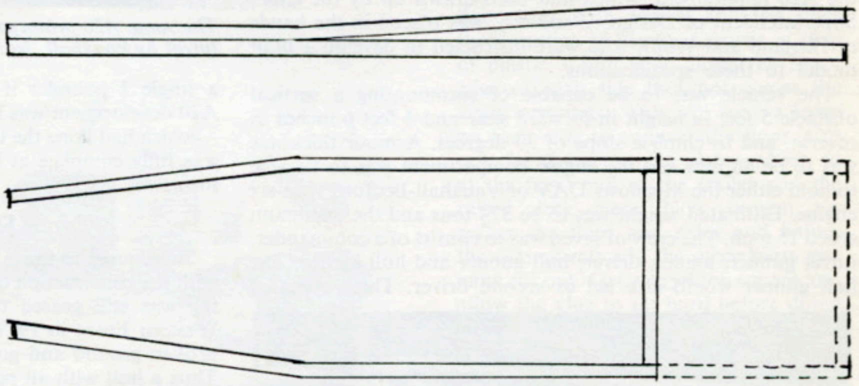
I do not intend to do a step-by-step outline, but merely to give general guide; after all, there are no two full-scale 'rods' exactly alike, although both may feature the same basic formula. Thus you can use almost any spare components that are handy and not necessarily stick to my directions. The basis of my model was a frame of $\frac{1}{16}$ inch welding rod, cut, bent and soldered to the plan given in the drawing. You could, however, use lengths of sprue for the frame but rod looks better and would be essential if you contemplated motorisation.

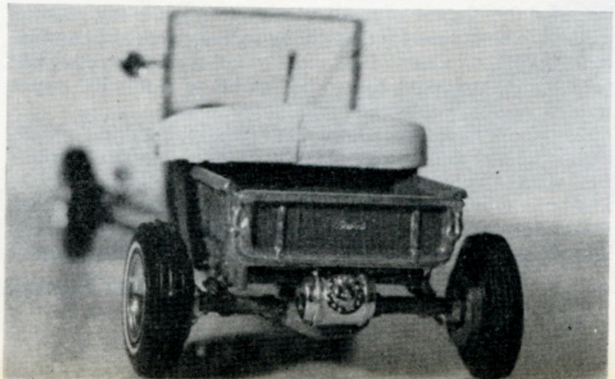
Rear axle and drive shaft were from an Airfix-MPC Stingray, the large leaf spring being cut off and replaced by coil spring units fashioned from sprue and 15 amp fuse wire. The front axle is a piece of chromed sprue carefully bent upwards (to lower the front of the car) and a rear axle leaf spring was then cemented to it. The radiator is from the Airfix-MPC Lincoln (complete with bullet holes) and with card surround glued to it. The firewall is also of card.

Engine is the kit flat-head V8 with the addition of a custom exhaust system from a Jo-Han Plymouth, though you could equally well use the same parts from the new Airfix Pontiac. Fuse wire was used for plugleads and carburettor linkage. The body was rubbed down and the pick-up body, after being shortened by half, was cemented to the rear. Seats are optional parts from yet another kit cut down after being glued into place, remaining gaps being filled with body putty. The windscreen is contained in the original frame and is 'guesstimated' at $\frac{5}{8}$ inch high. The kit wheels and tyres were used and various lamps and mirror were taken from further custom items left over from different kits.

Painting: Here one's imagination can run riot. My own model was finished with a deep blue body, wood finish pick-up body, red frame, transmission and brake drums and the interior of the body in 'Pearl' (silver and white mixed). Lots of chrome and silver round off, and there you are, one personalised 'hot rod' and (I hope) a few less parts in the spares box.

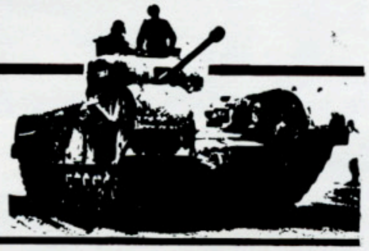
Heading: *Two views of the completed model which is made entirely from spare parts left over from other Airfix 'Elite' car kits. Note the exhaust pipe which could come from any kit. Even your choice of engine is optional! Wheels in this case were the custom wheels from the 'Woodie' Ford kit.* **Right:** *Full-size drawing for chassis which the author made from welding rods soldered up together. Spare sprue would do equally well.* **Below:** *Rear view shows axle and transmission from the Airfix-MPC Stingray kit and the cut down Ford pick-up body.*





Though my own model is not motorised, it would be pretty easy to build a slot racing version of a hot rod using the same basic chassis-plan. There is ample room for a motor in the body —even though you may need to add a paper 'tonneau cover' to conceal it. Similarly there would be no difficulty in substituting a live rear axle, contrate and Airfix racing car wheels in place of the kit components I have used.

THE CHURCHILL TANK



by Peter Chamberlain

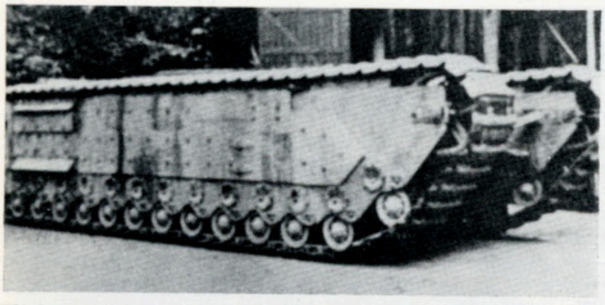
PART 1

DEVELOPMENT

THOUGH the Churchill tank could not be classed as one of the more significant tank designs, it was interesting as the culmination of the British 'Infantry Tank' concept which stemmed from the original employment of tanks in the first world war when an armoured 'landship' was thought of as a means of punching holes in the enemy line to let the following infantry through. Conceived in haste at the beginning of the second world war, the Churchill was dogged by development trouble at first though circumstances, if not fate, made it into one of the most widely used types in the British army and one of the longest-lived; it did not finally disappear from front line British service—though not in its original role—until as recently as 1965.

The Churchill's origin dates back to September, 1939, when specifications were issued for a new infantry tank design to be known as the A20. This had to be an even more heavily armoured vehicle than the then-standard A12 Matilda infantry tank. With memories still dogging the War Office of the static trench warfare conditions of the first world war, a good trench crossing ability was particularly necessary. In November, 1939, the A20 requirement, which had been drawn up by the Chief Superintendent of Design, Woolwich, was placed in the hands of Harland and Wolff, who were instructed to develop a pilot model to these specifications.

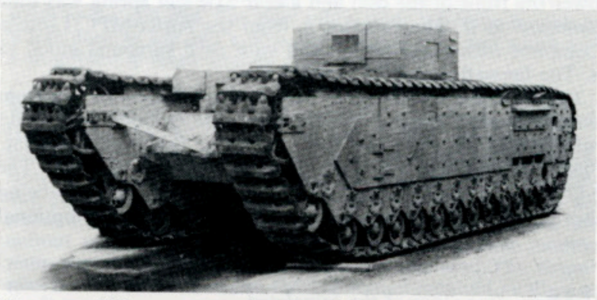
The vehicle was to be capable of surmounting a vertical obstacle 5 feet in height in forward gear and 4 feet 6 inches in reverse, and to climb a slope of 30 degrees. Armour thickness was to be 80 mm and the engine compartment was to be able to hold either the Meadows DAV or Vauxhall-Bedford twin-six engine. Estimated weight was to be 37½ tons and the maximum speed 15 mph. The crew of seven was to consist of a commander, turret gunner, loader, driver, hull gunner and hull loader. The hull gunner would also act as second driver. Three types of transmission were considered, fluid flywheel and crash gear box, the system employed on the Cruiser Mk V, or Merritt Brown controlled differential steering.



The A20E1 prototype seen at Vauxhall works after its arrival from Harland and Wolff in the summer of 1940.

Design of the vehicle was to lend itself to mass-production and various main armaments were proposed, including a 6 pounder gun, French 75 mm gun, 3 inch howitzer, or twin 2 pounders in a co-axial mount. These were all considered unsuitable and the final decision was made to mount a single 2 pounder with co-axial 7.92 mm machine gun, a 2 inch smoke mortar, a second 2 pounder in the hull front, and a machine gun recessed either side at the front of the hull. All remaining blind spots were to be covered by revolver ports sited in the hull or turret. At this stage the '14-18' mentality was still very clearly reflected in the idea of a large heavily armoured vehicle bristling with guns and moving at leisurely infantry pace.

In February, 1940, an order was placed with Harland and Wolff for four pilot models to be constructed in mild steel and designated A20E1 to A20E4 respectively. The first was to be delivered in June and an initial production order for a hundred vehicles was placed 'straight from the drawing board' on March 9, 1940. By June 11, the first pilot model was ready and made a preliminary trial run of over four miles until gear box trouble brought proceedings literally to a halt. Sufficient data was taken from this trial run, however, to show that the design was feasible, though the weight exceeded the 37½ tons allowed for in the specification. Further calculation, however, showed that it would be necessary to reduce the planned armament to only a single 2 pounder if performance was to be maintained so A20 development was halted when only two prototypes, A20E1—which had done the trial run—and A20E2, were built. Neither was fully complete at this stage, both lacking turrets or armament.

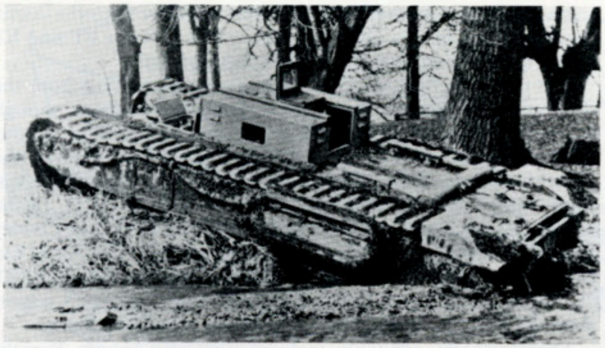


The same A20 prototype after the addition of a wooden mock-up turret by Vauxhall. Note the length of the hull and the 14 bogies.

FROM A20 to A22

Subsequent to the A20 trials, it was again decided to proceed with the construction of an infantry tank, and once more thinking was still geared to the qualities found desirable on the Western Front in 1917, namely good performance over rough broken ground and good trench and obstacle crossing ability. Thus a hull with all round track and small road wheels would be called for, the use of small wheels allowing the full width of the hull to be utilised for the fighting compartment and stowage, etc. The French Char B1 bis already had these characteristics. In addition, the turret had to be capable of a full 360 degree traverse.

As these features had already been incorporated in the A20, it was decided to send one of the vehicles to Vauxhall Motors Ltd so that this firm could carry out a full investigation into the feasibility of using the A20 design as a basis for the new model. Preliminary work commenced early in June, 1940, and general layouts and A20 drawings were handed over to Vauxhall at



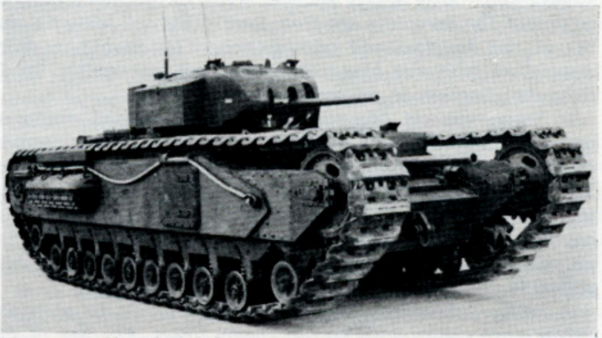
Above: *The A22 pilot model running trials. Compare the hull shape with that of the A20. Note exhaust manifold and side air intake.* **Below, right:** *HM King George VI inspects the very first production Churchill I during a visit to Vauxhall, Luton, in May, 1941.*

the end of that month. It should be remembered that at this period that demand for tanks was at a premium, most of the BEF's armoured equipment having been lost in the fighting in France and invasion then seeming imminent.

Detailed design was commenced straight away and 12 draughtsmen were loaned to Vauxhall from the Mechanisation Board Design Section to carry out this work. The new vehicle was designated A22 Infantry Tank Mk IV, the name Churchill being chosen after the design was adopted for production. The general shape, overall dimensions, and transmission details were very similar to those of the A20 but the A22 pilot model was, in fact, shorter than the A20 with several modifications and the addition of a wooden mock-up turret. A mock-up of the A22 was viewed by the Tank Board in November 1940.

THE EARLY CHURCHILL

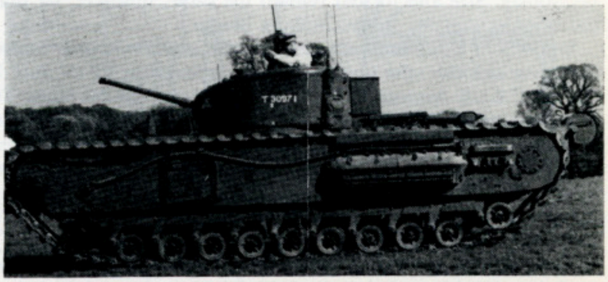
The hull was constructed on a graduated armour basis of 3½ inches front, 3 inches side, and 2½ inches rear thickness. In general the method of construction was to attach the armour plate to an inner skin of ½ inch mild steel riveted to mild steel angles at the joints, special bolts being used to secure the armour plate to the skin. The turret was cast on a 3½ inch basis and carried a crew of three, consisting of commander, gunner and loader, the rest of the crew being made up of driver and front gunner in the hull. The floor of the hull was flat and free from projections and divided into four compartments. At the front was the driving compartment which also housed the front gunner; immediately behind was the fighting compartment containing the electrically-operated three man turret. Behind this again was the engine compartment containing the Bedford 350 bhp Flat Twin-Six engine, and behind the engine compartment was a rear compartment housing the gear box, steering brakes and main brakes, the air compressor and power traverse generator.



Above: *A Churchill I from the first production batch. Note the 3 inch howitzer in the hull front, uncovered tracks and initial form of air intake.* **Above, right:** *A Canadian Churchill I comes ashore from a LCT during pre-Dieppe exercises.* (All photos Imperial War Museum.)

The engine had been designed to be as compact as possible, the time taken to design and construct the first running prototype engine being only three months. The radiators and petrol tanks were placed alongside the engine and protected by heavy armour, the horizontal tanks also being protected by armour plating against splash. Transmission featured the Merritt-Brown four speed gear box which provided controlled differential steering. The Churchill was the first vehicle to use this.

Panniers were provided at each side of the hull between the upper and lower runs of the track, these being used for storage of equipment. The tank was carried on 22 bogies, each independently sprung, 11 each side, and the tracks were of the steel articulated link type being spudded or webbed. Flanged steel wheels on the bogies carried the vehicle on the double rail section of the track links. Double doors were provided in the roof above the driver and front gunner as escape hatches and a square door was also fitted into each side of the hull, opening into the driving compartment. Periscopes were provided in the hull roof for the driver and gunner and were also fitted in the front of the turret.



Armament consisted of a 2 pounder QFSA gun and 7.92 mm Besa machine gun co-axially mounted in the turret, with a 3 inch QFSA howitzer in the front hull plate. A 2 inch smoke mortar was also mounted in the turret.

This then was the Infantry Tank Mk IV, Churchill I, a 38.5 ton vehicle with 100 mm frontal armour, a speed of 17 mph and a cruising range of 90 miles, first of a series that ran to eight basic models that varied in gun-power, armour and other modifications. Reworked models (modifications and the application of applique armour) brought the series to 15 marks.

The first pilot model Churchill I was undergoing tests by December, 1940, and the first 14 production models were delivered by June 1941. Due to the very real threat of invasion at this time, the Churchill was rushed into mass production without undergoing the rigorous field tests that were the standard practice, and it was not until early 1943 that the defects were really ironed out.

NEW BOOKS

REVIEWED FOR MODELLERS

Tank drawings

MILITARY VEHICLE PRINTS, SERIES 11. *Price 4s (post free UK, 1s 6d postage overseas).*

BELLONA COLOUR PRINTS, SET 3. *Price 13s 6d plus 9d postage. Published by Merberlen Ltd, Hawthorn Hill, Bracknell, Berks.*

BELLONA'S tank drawings take on a new, improved look with their latest issue and the set, in booklet form, now has a colour cover, new layout, and many more pictures than previously. Size and format remain the same, however, so that the booklet still fits in the Bellona binder.

Subjects of this issue include the Pz IV ausf D—which is also the cover subject—the turret of a late production Pz IV ausf J, the AEC 6×6 Armoured Command Vehicle, the Medium T6 (Sherman prototype), and the M22 Locust light tank. In addition there is a very useful illustrated article on the *Nahverteidigungswaffe* (or 'close-in defence weapon') fitted to German tanks in World War 2. As far as we know, this is the first time anything informative about this little-known weapon has appeared in public print.

As usual, all the drawings are to 1:76 scale, matching Airfix tank kits in size and thus very useful to tank modellers and converters. The pictures have also been reproduced better than in earlier Bellona tank booklets.

The Bellona Colour Prints are perspective drawings suitable for framing and featuring each subject as a three-quarter view. The Tiger I, Sherman Firefly, Hetzer, and Japanese Tankette Type 94 are covered in this way and each shows typical marking and camouflage schemes for its respective subject within the limits of the colour printing method used. We thought the red-brown and green of the Japanese Type 94 a little too bright to ring true, but otherwise the set is well done.

New Profiles

AIRCRAFT PROFILES 145-150, 151-156 & 157-162; CAR PROFILES 55-60, 61-66 & 67-72. *Published by Profile Publications Ltd, PO Box 26, 1a North Street, Leatherhead, Surrey. Price 2s each.*

PROFILES continue to come thick and fast and the three sets of Aircraft Profiles released since we last reviewed them in these columns include a good number of specific interest to aircraft modellers. Anyone who has tackled the Ju 88 night fighter conversion published some time ago in AIRFIX magazine will find many excellent colour schemes and a vast amount of detail information in Profile 148, while Profile 150 in the same set offers numerous attractive colour schemes for the later Corsairs (F4U-4 to F4U-7) and sufficient detail views for anyone wishing to convert any of the available F4U-1 kits on the market. Also in this set is the La 5 and 7, which makes us wish a kit was available, and a colourful MS 406 Profile.

Of special attraction in the second set are very nice Whitley and Wirraway Profiles, though only the immortal Ford Tri-Motor in this group is also available as a kit for modellers. From the latest set we specially liked the Avro Vulcan Profile by John Taylor and Francis Mason's Lysander Profile with some excellent colour scheme drawings applicable to the Airfix model. Others in this set are the Breguet 14, Ryan PT and ST series, the Mitsubishi Nell and Me 210 and 410.

The new Car Profiles continue to cover everything from the sleekest thoroughbreds to the more mundane runabout, though competition and racing machinery predominates. First of our review sets gives excellent treatment to the 3 litre Bentley, the superbly aerodynamic 1934 Auto Union GP car, the AC Cobra, the Stanley Steamers, and the Meadows engined HRG. In the second set we particularly liked the 'Bullnose' Morris Cowley Profile which is a 'must' for conversion ideas for the Airfix kit. Others in this group are the racing Italas, the Amilcar of 1920-29, the 1½ litre Squire, the Plus Four Morgan, and the Cooper-Bristol F2 car in which Mike Hawthorn sprung to fame.

The latest set available includes the well-known Porsche 356, the Healey-Silverstone, the stately Edwardian Argylls, the enormous Chitty-Chitty-Bang-Bang—a lovely model subject for scratch-builders!—the little Brescia Bugatti, and an attractive Profile by D. B. Tubbs on the Wolseley Hornet, the real one, of course, and not the Mini of that name.

The Mosquito story

MOSQUITO, *by C. Martin Sharp and Michael J. F. Bowyer. Published by Faber & Faber Ltd, 24 Russell Square, London WC1. Price 84s.*

SHORTLY after the second world war ended work commenced on a Mosquito history to serve as a tribute to the brave personnel of the RAF and Commonwealth countries whose names are now a hallowed memory. It was to also teach a timely lesson on the importance of personal enterprise. Many problems then prevented publication of a work that could do justice to the subject, not the least of which was the proximity of the events to be described. *Mosquito*, recently published, is the outcome of these plans whose origin lay in the very genesis of the Mosquito itself.

Mosquito is an outstanding work. Within its 550 pages appears the result of research by two dedicated workers, who have produced a handsome volume after years of intensive study during which they pored over millions of words collected from a host of sources.

Two of the names associated with *Mosquito* are well known to readers of this magazine. Michael Bowyer was responsible broadly speaking for the military side of the work, and Alfred Alderson produced some of the excellent graphs and maps and other line drawings which illustrate this work, ably supported by George Burn.

The industrial background to the story was in the skilled hands of C. Martin Sharp, one time editor of the Air Transport section of *The Aeroplane* and from the 1930s a well-known member of the de Havilland organisation. This gave him daily association with the Mosquito and those responsible for it from its inception to its greatness.

In many respects *Mosquito* differs from detailed works of recent years dealing with one type of aeroplane. It is presented maintly in narrative form, making straightforward reading. We feel that an obvious attempt has nevertheless been made to retain a staggering amount of factual matter yet never to overlook the human aspect of the story, and at the same time introduce a mass of hitherto unpublished material with much appeal to enthusiasts.

A really painstaking attempt has been made to correlate fighter crew claims with known enemy losses. The last of the appendices, No 23, deals with claims in detail. Without intensive and concentrated research such listing would have been impossible; yet the value of a book of this nature is surely greatly

Continued on page 430

NEW KITS AND MODELS

MORE FROM JAPAN

BMW Models Ltd of Wimbledon tell us that they are extending their labelling scheme for the many ranges of kits they import to make ordering even easier for the customer. In future all imported aircraft kits will be distinguished by the existing BMW Red Label, all tank and military kits will be distinguished by a Blue Label, and all boats and ship kits will carry a Green Label.

Several new aircraft kits are being imported from Japan by BMW including additions to the Aosima range of 1:72 scale (or near-1:72 scale) kits which have already become favourites with collectors. Latest four review samples from Aosima we have are of the Brewster Buffalo, Douglas Dauntless, A6M2 Zero and Goshikisen. Of these the Buffalo and Dauntless, both to 1:72 scale, are very good indeed, and each has provision for motorisation though motors are not included. By Western standards the instruction sheets and transfers leave much to be desired but, a little flash apart, there is little to fault in the kits. Both have sliding canopies—overscale but not obtrusively so—and operating retractable undercarriages and flaps which are neat though obviously a little fragile. If anything, the Buffalo was, we thought, by virtue of its more discreet rivet and panel detail, rather superior to Revell's model, though this is a matter of opinion. Partially correct transfers are given for the RAF Buffalo illustrated in Volume 1 of *Aircraft of the Fighting Powers* but the camouflage pattern given in the instruction sheet is wrong. There are also optional US transfers. The Dauntless has no painting instructions at all, just six US stars so the modeller must seek his own references for this model.

The Zero is also a pleasantly detailed model with a choice of two canopies, one in the open and one in the closed position. It also has retracting undercarriage and provision for a motor in the fuselage, but at 1:78 scale it has the drawback of looking rather tiny in a 1:72 scale collection. Detail fans will probably be happy to overlook this discrepancy, however. The Goshikisen, to 1:72 scale, is a much simpler model with working undercarriage and ailerons as the only gimmicks and very easy to assemble. Unlike the other kits it features as display stand. All these kits cost 4s 11d each and stocks are held by BMW Models.

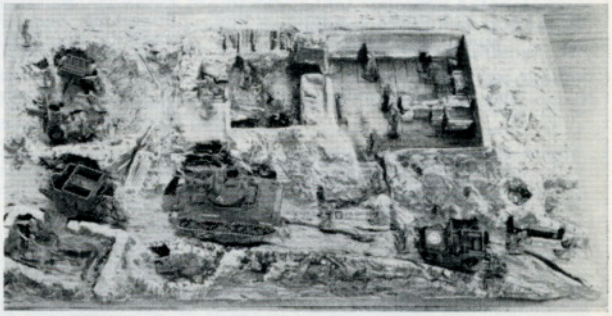
C.O.E.

INTRICATE TANK

ONE of the most intriguing models we've seen for a long time, an automatic action tank, is the latest addition to the BMW Blue Label range. In kit form, this is a JS-3 to 1:35 scale which carries out a choice of five movements by pre-setting the engine controls according to which action you want it to carry out. Thus you can have the model running straight, zig-zagging, turning 90 degrees, turning 180 degrees, or traversing its turret. The control levers work on a gear train which sets the drive accordingly. The usual type of electric motor is supplied which runs off a standard torch battery—not included—and all the necessary wiring and contacts are included.

While the hull and turret are reasonably accurate, however, the model's appearance is somewhat spoilt by the non-prototypical disc wheels which appear to have been utilised from a Patton tank kit. One other snag is that the instruction sheet is entirely in Japanese and none too explicit—we are still trying to sort out all those gear wheels! These faults apart, it offers plenty of modelling for your money to those who like something out of the ordinary. The price is 27s 6d and it is obtainable from BMW Models.

C.O.E.



Above: *Bellona's new Menin Road layout. The tanks are not supplied.*

MENIN ROAD

MENIN ROAD is the name given to the latest diorama piece produced by Bellona. It will go with troops from the American Civil War, or suit either world war for which it is mainly intended. To OO/HO scale, it is very well detailed and goes well with Airfix tanks and figures.

A new feature, introduced for the first time, is a removable cellar roof, which also forms the ground floor of the building. This means that the cellars can house a first aid post or HQ while troops move about overhead. Alternatively the cellar roof can be used separately as a ruined house. The whole unit measures 16½ × 10½ inches and costs 9s 8d, postage extra, from Merberlen Ltd.

C.O.E.

A NEW IDEA FROM RENWALL

ALTHOUGH we have reviewed previous kits from Renwall where the framework of an aircraft's fuselage and wings is provided and the model maker has to cover them in a fabric they call Aero-skin, we have now been sent the latest example which goes one stage further.

A series of 12 first world war Allied and German aircraft have been modelled using this method. Kits range from a Pfalz DIII to a Spad XIII and each is in the marking of a well-known ace. For example Guynemer's Nieuport 17, Collishaw's Sopwith Triplane and Richthofen's Fokker DR1. All are to 1:72 scale.

Modellers, although willing to experiment, are a conservative breed, and it is felt that these kits go just a little too far. There's none of the joy of finishing a model in an authentic camouflage scheme and if you disagree with the product as offered in the shop there's little chance of being able to change anything. Conversions are definitely out! A fair amount of skill is required to get the fabric over the structure correctly and in this there is a certain sense of achievement as it is no easy task. A bottle of

Continued on page 427

MODELTOYS

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BL.13	Coventry Armoured Car	1/35	12/11
BL.14	Saladin Armoured Car	1/35	15/11
BL.15	M8 Armoured Car	1/35	15/11
BL.33	A.M.X. 105 French Tank	1/35	19/11
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the dioramaic centrepiece for ANY battlescene

MENIN ROAD

Figures shown in the picture are Airfix and not supplied with the trench.

MENIN ROAD is the name given to the latest diorama piece to be produced by **BELLONA.** It will be equally at home with troops from the American Civil War, Russia, Paratroops, or the Armies of World War One. Menin Road is just the type of landscape seen in so many battle pictures.

A new feature, introduced for the first time by BELLONA, is the removable cellar roof, which also forms the ground floor of the building. This means that the cellar can house a First Aid Post, H.Q., etc., whilst troops move about overhead. Alternatively the cellar roof can be used as a ruined house in its own right. Formed in earth brown PVC.

The Menin Road as a scenic piece has unlimited variations of application in both time and location.

SIZE 16½ x 10½. PRICE 8/2, plus Tax 1/6, plus Postage

Postage: UK 1/– (4d.). Overseas 4/6 (1/5). Commonwealth 1/6 (6d.). Postage for additional sets packed in same box shown in brackets, maximum 4. Price in US dollars, including postage: 1 Menin Road $2.10. Additional sets $1.65.

FROM YOUR STOCKIST OR BY POST FROM: **MERBERLEN LTD.** DEPT. A, HAWTHORN HILL, BRACKNELL, BERKS

New Kits—continued

liquid polystyrene cement is provided.

We were sent McKeever's Bristol Fighter as an example of the range and found that in the main it was accurate. The Aero-skin covering fitted well enough though minor modifications had to be made in places and a little touching up with matt green was needed here and there. Perhaps the greatest advantage of using this method is that the finished model really does look authentic from the camouflage point of view. All the dirt marks of an operational aircraft can be reproduced but the model must necessarily lack the individual character of a painted model.

Whatever our own opinions the vast mass of the model-making public will decide if it wants this type of construction. There are many advantages but equally there are disadvantages, including a price of 9s for the imported kit. If you can afford this sum it is well worth getting one of the kits offered. BMW Models of Wimbledon, who supplied our review sample, have stocks. *A.W.H.*

BIG SHIPS

ANYONE who likes model ships which really are sea-going—or at least pond-going—will be delighted with the latest BMW Blue Label ship kits. These are 1:750 scale fully working models of the battleships *Yamato* and *Mushahi* at 25s each, 1:400 scale models of the cruisers *Myoki* and *Haguro* at 37s 11d each, and a truly giant-sized kit of the aircraft carrier *Shinano* to 1:450 scale and 59s 11d, all made by Hasegawa in Japan. We have the latter pair for review and will be reporting more fully on these at a later date when we've had time to build them. Motorised in the traditional Japanese kit fashion and battery operated, these kits come with one-piece lower hull, shafts, propellers, wiring, and with fully detailed fittings so that they make up into true scale models quite apart from their qualities as motorised models. On first inspection both appear to be very accurate and with a high degree of thought going into the design. Obviously they cannot be rushed nor are they suitable for beginners subjects. BMW Models of Wimbledon hold stocks. *C.O.E.*

MILITARY PAINTS

BIG news for military modellers is the release of a new range of paints specially mixed to meet their requirements by the American company of Floquil. This firm already make a range of railway colours and these, together with the new range of military colours, are available in Britain from Victors, 75 Chapel Market, Islington, London N1. Numerous important colours which the modeller has until now had to mix for himself, come ready for use straight from the bottle in the Floquil range and among these are included such useful shades as Field Gray (exactly right for German uniforms), Olive Drab and Brown Drab (which are just right for British and US tanks), Dark Gray (for German tanks of the early and mid-war periods), Buff (ideal for German tanks and desert war period), and Khaki. In addition there are many colours suitable for model soldiers, including Blue Gray and Gray for US Civil War uniforms, Scarlet for tunics, Prussian Blue, Medium Blue for French World War 1 uniforms, and several shades of brown and red. There are, in fact, 33 different colours plus thinners, retarder (for slowing the drying time), clear gloss varnish, primer, and metal cleaner for use before applying these paints to metal surfaces.

Above: *New BMW Red Label kits for the Dauntless and Buffalo from Aosima.*

By courtesy of Victors we have been able to try a sample batch of these new colours and found them to have several novel characteristics not found in other paints. For a start these are Xylene-based not oil-based so they differ considerably from conventional plastic enamels. They are toxic and inflammable, rather like dope, so users must take care when using them. Probably the most desirable feature for modellers is their absolutely flat matt finish, their very fast drying time (touch-dry in 5 minutes), and their thin but perfect 'spreadability', which virtually eliminates brush marks. Because of their very thin consistency, details are not obscured and a very high standard of finish is achieved. We tried out these paints on various types of plastic, aside from ordinary polystyrene, and found that they went very well on Airfix OO/HO scale figures—with no flaking off—and on the plastic used in Airfix forts and Attack Force models. Bellona plastic models also took this paint satisfactorily.

Price of Floquil military colours is 3s 9d per jar and the thinners is 1s 8d. Jars are ⅝ fluid oz in size. Though this price is on the high side, many modellers will accept this for the convenience of ready mixed colours and the high standard of the paint itself. A colour chart is also available from Victors, price 10d. *C.O.E.*

PETE AND NELL

TWO other new arrivals to the BMW Red Label range are the Hasegawa kit of the F1M2 Pete floatplane and the LS kit of the G3M3 Nell, Japanese Navy attack bomber. The Pete has been reviewed in detail and illustrated in these pages before (New Kits and Models, March 1967) and it is only necessary to say that this model is to 1:75 scale. It costs 4s 11d.

The LS kit of the Nell is to the high standard for which this Japanese manufacturer is already well known. It makes up into a very nicely detailed and accurate 1:72 scale model of this good looking aircraft—responsible for the hunting and sinking of Force Z in the dark days of 1941—and full marks go to the manufacturer for presentation. The instruction sheet is in Japanese, but easy to follow because of its pictorial step-by-step assembly sequence. There is a separate colour sheet giving marking and painting details for six different machines and the transfer sheet gives alternative markings for all of them. The kit itself is very well detailed, with interior fittings, retracting undercarriage, working ailerons and elevators and a choice of bomb or torpedo armament. The transparencies are particularly good while a separate sprue carries the parts like tyres, dashboard, and engine cowlings, which are black. The kit costs 18s 11d from BMW Models who supplied our sample. *C.O.E.*

Letters to the Editor

Letters to the Editor can only be answered in the magazine. Readers whose letters are published each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters columns.

Model display

READERS may be interested in a large display of over 200 1:72 scale aircraft models covering the period from 1914 to the present which I am organising with a friend at the Salisian College Fete on Saturday, July 1. The display will be housed in the ground floor of the Science Block of the College in Reading Road, Farnborough, Hants. Admission to the display will be free though there is a small entry charge for the fete. In addition to the main 1:72 scale display, there will be a separate section for 1:48 scale models and a big collection of aviation photographs and paintings depicting prototypes of some of the model subjects. We would be delighted to see any readers of AIRFIX magazine who live nearby and are able to come along.

Richard Gardner, Farnborough, Hants.

From pictures of some of the models sent to us by Mr Gardner, we think this display will be well worth seeing.—EDITOR.

Help wanted

I AM in the process of building a scale layout of a Luftwaffe fighter airfield of which the main point is the hangars. I have been unable to discover the camouflage scheme of these and I wonder if any reader has any knowledge of this?

R. J. Stranks, South Harrow, Middlesex.

Modern DUKW

ALTHOUGH my usual sphere is aircraft (I have some 300 1:72 scale aircraft) I also enjoy constructing and converting Airfix fighting vehicles, which brings me to the point of this letter.

Those readers who went to this year's Biggin Hill Air Fair will probably have noticed that the Army had on display a DUKW, a vehicle still in regular use (which greatly surprised me) so I thought that other readers might like details of its colour scheme.

The RCT square on the right side, front and rear, was blue on the top half, and yellow below with '303' in black. On the opposite side was an equal sized blue square with white dolphin and sword, this having a gold handle. '76YP38' appeared in white on black in the usual three positions. Below this at the rear appeared, again in white on black, 'Caution left-hand drive'.

The vehicle was overall warship grey, and had a greenish brown tilt fitted. This differed from the Airfix model in having a small window at the rear. I found it best to make a new one using wire and masking tape. (I have just made a DD Sherman by this method, and the masking tape gives an excellent impression of canvas.) Finally colour could be added by including the yellow lifebuoy lying on the spare wheel. The machine gun pulpit was omitted.

M. Verrier, Canterbury, Kent.

Making mud

MILITARY modellers may be interested in a simple and *clean* way of adding a muddy look to their tanks. Simply smear plastic body putty in small quantities over wheels, tracks and mudguards as desired—though don't overdo it. When it has set, touch it over with suitable muddy colours.

Martin V. Cook, Monmouth.

Poor modeller

FIRST I would like to say how much I enjoy your magazine, especially the articles by Geoff Snell.

But I am of the opinion that some of his motorised models are rather expensive for a schoolboy such as myself. I am 14 and my pocket money doesn't stretch as far as Geoff Snell's! So here is a tip for poor car modellers.

I have used old chassis of long-condemned cars. I find that they give the motors, wheel assemblies and pick-up braids their right 'environment'. But of course suitable supports have to be made, but I found these no trouble at all; also the chassis may have to be altered. I have now used this method on two cars, the Sunbeam Rapier and the MGB.

For the Sunbeam I used an old Cooper chassis and for the MGB an old Lotus Cortina chassis altered slightly. I used old Ferrari wheels on the MGB, fitting a front set of tyres on the back.

These cars race very well and cost little. My Sunbeam cost me only 13s and the MGB only 14s 3d.

J. L. Harper, Carshalton, Surrey.

Roman remarks

I HAVE been interested in war games for some years and have used Airfix soldiers, vehicles, ships and recently also aircraft. I was glad, therefore, to see the new Romans, but I have some criticisms of them.

The detail on the figures is excellent, and the idea of making the shields detachable is a good one. The poses of the legionaires (the word is not 'legionnaires' —this only applies to members of the French Foreign Legion) are badly chosen, however. The Romans fought by forming line, charging at the enemy if they did not attack first, throwing their pila ('pylom' is a mis-spelling—the word is pilum; just before impact, crashing into the enemy line with their shields locked together in front of them, and jabbing round the edges with their short swords or gladii. If they did break ranks they would still hold their shields in front of them—a shield held at the side as in nearly all these figures would be worse than useless.

The archers are accurately detailed, but they were not legionaries. When the Romans used archers, they were always auxiliaries and were regarded as strictly second-class troops. Incidentally, could you please tell me what nation they are supposed to represent? They seem similar to Assyrians.

A two-man, four-horse chariot is included. Surely the Romans only used these for chariot racing?

Despite these faults, the Romans are well turned out. As the standard bearer is not an eagle-bearer, could you tell me of what the standard is? I was under the impression that individual centuries did not have their own standards.

A. C. F. Barton, Ewell, Surrey.

Bond's car

IN the Airfix catalogue the James Bond car is shown painted gold. I do not know if this is recommended in the instructions, but it may interest some readers to know that the colour on the actual car (which I have seen) is a gloss silver-grey. Also the interior is matt black not red as shown in the catalogue.

G. Napper, Alton, Hants.

Harrier serial

IN the June edition of AIRFIX magazine you showed a picture of a Hawker Harrier and said its serial was XY276. This is obviously wrong and the serial should be XV276, the aircraft which appeared at Farnborough last year.

D. Hockings, West Wickham, Kent.

Sorry, our mistake.—EDITOR.

Romans

I HAVE just bought two packets of Airfix OO/HO scale Romans. I am highly delighted with them; they are very accurate except for one thing: the Romans did not use chariots in warfare in Julius Caesar's time. However, with a little conversion of 'Robin Hood' figures and reshaping the chariot, a very satisfactory British chariot (the type of which Caesar encountered in his first conquest) can be made.

I hope (to coin a phrase) one good

thing leads to another and brings out Britons, Gauls or Belgians.

I was somewhat mystified by the weapon 'pylom'. If the weapon referred to is a javelin, the Latin word is 'pilum' or in the plural 'pila'.

R. G. Trendall, Harpenden, Herts.

Canopy moulding

OCCASIONALLY in the course of aircraft kit converting, there comes a need to mould a canopy which is difficult because if normal methods were used, an insufficiently sharp outline would result. Examples of this in recent practical conversions are the Sea Devon and the Dornier Do 217 K-1/K-2. A suitable canopy can still be made by one method or another, but I consider the following method to be far better and easier under these circumstances.

Basically all that is entailed is the making of a female mould which fits the outside dimensions of the canopy exactly, and then making the canopy in the normal way. The first task then, is to hollow out a depression in a block of softish wood. The depression should be a bit deeper, wider and longer than the male mould, and there should be enough wood around the hole to pin the acetate sheet and to hold while moulding. Next, melt some lead, and pour this into the hollow. Into this push the male mould, which has been previously sanded down to the *outside* dimensions of the canopy, and highly polished. Some of the lead will overflow, and for this reason the operation is best done in some sort of sand bath. When the lead has cooled, the male mould is removed, is thinned down by the thickness of the acetate sheet, and is once more highly polished. The acetate sheeting is placed over the hole and is pinned to the wood. Then the whole thing is heated under a grill, and when the correct temperature is reached, the male mould is pushed home. With practice, perfectly shaped canopies will result.

Malcolm Oliver, Ruislip, Middx.

Short Stirlings

WITH reference the civil Stirling transport depicted in your May edition, I very much doubt if *several* of the civil versions were operated by the Belgian company, but two at least were seen at Blackbushe during 1949; in fact the second aircraft's undercarriage can be seen behind OO-XAS in the photograph on page 331 by John Rawlings.

The aircraft were drawn from the Stirling MU at Polebrook and the two in question for the Belgian fruit haulage company were Mk Vs—OO-XAS was ex-PK153:XK-B of No 46 Squadron with 'LX' on nose, whilst OO-XAV was ex-PK174:TB-G of No 51 Squadron with 'JC' on nose. Both ex-Transport Command of course.

I saw and photographed both aircraft at Blackbushe on September 27, 1949.

A. Pearcy, Llanbedr, Merioneth.

Bit o' Lace

I WAS interested to learn in the June issue of AIRFIX magazine of the discovery by Mr John Bauman, the original pilot of the B-17G 'Bit o' Lace' of the Airfix model of his old aircraft. Actually I can claim to have played a part in this remarkable story, for it was upon my suggestion that Airfix chose 'Bit o' Lace' as the subject for the model. Mr Bauman —and other readers too—may be interested to hear that some excellent air and ground views of 'Bit o' Lace' and its sister-ships of the 447th Bomb Group at Rattlesden are to be found in the files of that well-known aviation photographer, Mr Charles E. Brown.

Incidentally, some readers may recall the delightful USAAF official colour photo of the 447th's B-17Gs which appeared in a wartime issue of *Flying*.

Philip J. R. Moyes, Bookham, Surrey.

Tank tip

WHILST constructing the 1916 tank I encountered difficulty in preventing the guns continually pointing towards the ground, a problem obviously troubling Chris Ellis in his excellent conversion article.

I managed to rectify this fault upon my model by filling the space behind each gun mounting with Vaseline; this simple measure permits the guns to remain in any position desired. I trust this tip will prove useful to other modellers of this otherwise fine kit.

W. M. Dadson, Loughborough, Essex.

Better half

I HAVE often heard of people complaining that they have not enough space for their models.

Being a keen car model collector I solved the problem of how to display them.

As colour prints seem to be a favourite collector's item I decided to go one better.

I started with a Dennis fire engine kit as an experiment to see how it went.

Looking from the front I assembled all the left hand side of the model, painting it as I went, and any part that ran into the other side I cut along the centre line, so that when it was completed it looked as though I had completely made the model and cut it down the middle.

I chose that side because it has the most detail, ie, steering wheel, bell, handbrake and hoses.

When it was mounted in a picture frame it looked most impressive and will go well in any room.

K. E. Harvie, London, SE4.

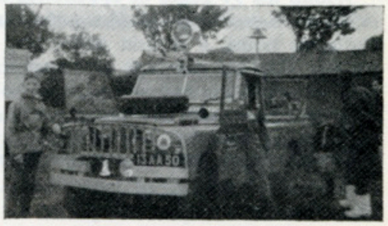
Imperial Russia

I FOUND that it was quite an easy task to convert the second world war Russians into 1914 Imperial infantry. Here's how to do it. First cut off the helmet and, leaving the face intact, replace it with a peaked cap (I got mine from the 1914 British infantry). Cut off any machine guns and cement on any 1914-period rifle. You will find that these are the only necessary changes in the actual uniform, though the colour schemes are very different.

For painting, therefore, the boots are black, the trousers dark grey, and the tunic is approximately the colour of the unpainted plastic. The sash is painted very light grey or white, and there is a much smaller and thinner belt of the same colour running diagonally in the other direction. The belt running round the waist and the rifle are both brown. The epaulettes are royal blue, and the cap is light grey, with the exception of the black peak.

The infantry carried the Imperial Standard, a yellow flag with the arms of Russia, a two-headed eagle, in black.

M. C. Dinnage, London, W6.



Rescue Land-Rover

AFTER reading J. Short's letter in the February AIRFIX magazine, I thought readers might be interested in the photograph (***reproduced here.—Editor***) I took of a similar vehicle at the Round Table Show here last summer. This vehicle was red overall, but it had silver grille and bumpers.

D. Noble, Richmond, Yorks.

Anzac troops

WAR gamers who wish to add Australian and New Zealand troops to their forces, now have an admirable source of supply in the Airfix 1918 American Infantry. In the case of New Zealand troops, simply cut off the heads of the Americans, and stick them to the bodies of the British 1914, 8th Army or World War 2 infantry. If 8th Army soldiers are used, the heads taken from them can of course be used on the American figures.

To make Australian troops, the left side of the American hat brim is turned up, the point of the crown cut off, and a groove running fore and aft is cut in the top of the crown. The head is them stuck on to the appropriate body.

W. J. Bowler, Wednesbury, Staffs.

Pen-friends wanted

THE following readers have written to the Editor requesting pen-friends: K. Ryder, (13), 574 East Prestcot Road, Knotty Ash, Liverpool 14, who can read and write German and would like a German pen-friend interested in World War 1 aircraft and aces. He is also willing to exchange kits and books. Ian Odgers, (18), of 89 Oakleigh Road, Carnegie SE9, Melbourne, Victoria, Australia, would like to be in touch with anyone in his age group from Britain, USA, or Europe interested in aircraft and aircraft models from 1930 to the present day He is a member of IPMS-Australia. A. Hughes, 17 Lepper Street, Belfast 15, Northern Ireland, would like a pen-friend in USA and another in England in the 16-18 age group interested in warships and aircraft and willing to exchange kits. Anthony Keureb, 60 Castlemaine Street, Yarraville W13, Melbourne, Victoria, would like a pen-friend from USA or England aged about 16 and interested in military modelling. Dr Peter Tuzin, Vrchlickeho 3, Olomouc, Czechoslovakia, would like to write to anyone in England willing to exchange Airfix (World War 2 aircraft) kits for East German and other East European kits and aviation magazines. J. T. Thompson, 22 Vale View, WFE, Stockingford, Nuneaton, Warwickshire, is particularly interested in research on the Phantom II, particularly colour schemes, and would like to hear from anyone keen to exchange information or photographs.

Interested readers are requested to write direct to the addresses given.

New Books—continued

enhanced by this fascinating item. It lays open to question, however, the usual veracity to claims and leads the reader to query some previously published material on this topic.

Within the 91 pages of appendices one finds detailed photo captions, a summary of Mosquito variants, graphs and performance notes, a section concerning outstanding individual aircraft, detailed coverage of Mosquito bases and squadrons and, as a stunning end two pages in colour graphically dealing with the almost daily changes of marks on the squadrons. From this amazing item we deduced (correctly it seems) that No 406 Sqn used Beaufighter 1Fs until mid-June, 1942, when VIFs took over. At the end of June, 1943—one may assume about 29th—the first Mosquito XII joined the squadron, although the last Beaufighter VIf did not leave the squadron until mid-August, 1944. During the last few days of June, 1944, Mosquito XXXs began to reach the squadron which, according to the book, disbanded on August 31, 1945.

This is a book which will surely have you reaching for your log book, thumbing your photo album, wondering if any of the Mosquitoes which came your way get a mention or just simply wish you had been around in those obviously dangerous but exciting days for Europe.

Japanese equipment

JAPANESE INFANTRY WEAPONS, *edited by Donald B. McLean. Published by the Normount Armament Co, Oregon, USA, and available in Britain from Ken Trotman (Arms Books), 3 Ash Close, Naphill, High Wycombe, Bucks. Price 25s plus 1s 6d postage.*

THIS book is uniform with the volume on German equipment reviewed last month, and once again it reproduces wartime US Army intelligence material originally issued to units in the field. Thus, like the German book, it is encyclopaedic in coverage with more than 240 pages devoted to pictures, cut-aways, action shots, specifications, handling and maintenance notes, and just about everything else on weapons and other items used by the Japanese infantry in the second world war. Small arms, grenades, mortars, mines, anti-tank guns, infantry howitzers, machine guns, and ammunition are all included. There is an organisation chart for a Japanese infantry regiment showing the correct establishment and the arms carried, and an extra supplementary sheet gives a pictorial guide to ranges and trajectories of the principal Japanese guns. In short this is virtually a standard reference book on the subject containing as much as the average military enthusiast would ever need to know, if not more. Needless to say, it gives the modeller all necessary information for equipping the Airfix Japanese soldier sets with a full complement of scratch-built weapons.

Incidentally, the British stockists tell us that, following our review of *German Infantry Equipment*, this book is temporarily out of stock but further supplies are on the way from America to fulfil outstanding orders.

Basic books

THE OBSERVER'S BOOK OF BASIC AIRCRAFT—CIVIL AND MILITARY, *by William Green. Published by Frederick Warne & Co, Chandos House, Bedford Court, London WC2. Price 6s each (two volumes).*

AS stated when we reviewed the 1967 edition of *The Observer's Book of Aircraft,* two further aircraft books have been prepared to supplement this annual offering by giving coverage to established types while the *Observer's Book* proper devotes itself to latest types and derivatives. These two books—one on civil and one on military aircraft—are now published and very good they are too. Following the usual format they give a double page spread to each type with a picture, data, and silhouette as appropriate. Where valid, extra silhouettes are given to show differences between various marks—thus there are three Hunter side elevations to illustrate marks 7, 9 and 11. Old timers like Tiger Moths and early Austers find their way into these books, after a long absence from the annual editions. With more than 400 drawings and 140 pictures per book, these offer the usual top value at their very modest price.

Standard steam

BRITISH RAILWAYS STANDARD STEAM LOCOMOTIVES, *by E. S. Cox. Published by Ian Allan Ltd, Terminal House, Shepperton, Middx. Price 42s.*

BETWEEN 1951 and 1960, 999 steam locomotives were built to BR standard designs made up of 12 different basic classes. With the outstanding exception of the Britannias on the Great Eastern Line, they made very little impact on BR's services since in most cases they were used turn and turn about with locomotives built to pre-nationalisation designs. The BR designs were however the last steam locomotives to be conceived and built in Britain and as such they deserve a comprehensive record such as this. The author, Executive Officer for Design on the former Railway Executive, is well placed to describe the personalities and events that led to their design and he does so vividly and with much more detail than usually meets the light of day.

Avro 504N—continued

RIGGING Although an advocate of using very fine nylon thread for rigging wires, I succumbed on this occasion to the advice of my colleague Dick Ward and used his method of finely stretched sprue. No 504 looks authentic unless every rigging wire is in place and this can be a long job.

The wings and struts are painted before rigging is begun as you can't get in to do this job after the wires are in place. At the same time the underwing serials will have to be added as some of the rigging goes over the letters and numbers.

Each section is carefully measured with dividers and the required length cut. A minute blob of cement is applied either to the end of the rigging wire or to the position on the wing, whichever is easiest, and the wire carefully placed in position. Any glue marks can be touched up afterwards but this should not be necessary if the job is done carefully. It is also worth using silver sprue if this is available as there will then be no need to paint the wires.

FINISHING AND PAINTING Compared to some of the other work in this conversion, the finishing and painting is easy. Most of the work is done before the rigging wires are assembled and the scheme is basically silver overall with a black area on the fuselage forward of the wings. On the latter I used Humbrol 'Railway' semi-matt colour. Gloss is always too shiny for modelling purposes. Similarly I mixed matt and gloss red for the wheel hubs to give a semi-matt finish.

The tail stripes were painted on, though HisAirDec do produce transfer strips which will do this job for you. Tail serial numbers, and indeed those on the fuselage as well, came from Letraset sheets, the former having a white outline hand painted on them. The 601 Squadron crest on the fuselage sides was hand painted on transfer sheet, cut out and attached. This job can be done direct on to the fuselage sides but it only adds difficulty and the chance of getting it wrong is very great. Fuselage roundels and those on the wings came from the set with the kit. Yeoman ⅛ inch black letters and numbers were used for the underwing serials.

CLASSIFIED ADVERTISEMENTS

RATES:—5d. per word. Minimum charge for each insertion 5s.

FOR SALE

Tamiya kits post free at lower prices: Aircraft 1/72: Jack, Tojo Shinden, Zero 32, Hayate at 5/- each. At scale 1/50: Ki.100, Jack, Tojo, George, Tony, Oscar I, Zero 52 and 63 9/- each. Tanks 1/35 incl. motor, prices each: Scorpion, Coventry 12/-; Saladin 14/-; T-34, AMX 105, AMX DCA 30, SU.100, Walker Bulldog M.41 20/-; Rommel Tank, M.4. Sherman, T.55, AMX 30 26/-; Patton, Stalin T-10 30/-; Chieftain 35/-. I.M.O. or banknotes to: M. Hodde, Lex Althoffstraat 24, Amsterdam.

100 Military models and extras worth well over £20. Please call personally and no letters if possible: C. Edwards, 8 Moor Ave., Leeds, 15.

We supply transfers; parts for conversion purposes for Airfix, Frog, Revell. Nearly everything 6d. S.A.E. for information: 7c, Woodside Road, Sutton, Surrey.

Quality 1/72 scale Aircraft from private collection. Low prices. S.A.E. for list: Hosking, 15 Hailes Gardens, Colinton, Edinburgh, 13.

Si vous etes interesse par'Les Avions Francais De 39/45, vous devez vous abonner au 'Journal' de I'PMS-FRANCE. 11 parait chaque mois et il consacre ses pages a ces appareils peu connus et aux maquettes plastique, avec des photos, des plans, des profiles, des historiques souvent inedits, Pour tous renseignements ecrivez-nous: IPMS-France, 1 Rue Carnot, 93-Gagny, France.

Stradden 30 mm. metal soldiers. Waterloo period, handpainted. S.A.E. for list: 16 Cornwall Gardens, London, S.W.7.

Constructed AMT's 7/-. 350 Airfix soldiers 7/-. 130 instruction sheets 6/-. Decals 5/-. S.A.E. lists: 230 Inver Road, Bispham, Blackpool.

Schneider Trophy Contests. The only book to describe the British Seaplane's triumph 1913-1931. 66 pp, fully illustrated with R.P. photographs. 7/6d. post paid: Real Photographs Ltd., Victoria House, Southport.

Real Photographs Ltd. Victoria House, Southport, announce the publication of list 65A/1, Aeroplane Photographs recently added to their range. List 9d, or with specimen photograph, 1/6d.

New 1/72 Aircraft kits from Japan: Nell Mk. 23, The Nippon (Civil Version), Peggy, Yasukuni, Ki.109 (20/- each), Emily Flying Boat (48/-) and other kits back in stock. Also Hawk and Aurora kits WWI and II. Post free prices from M. Hodde, Lex Althoffstraat 24, Amsterdam.

Politoys metal die-casts at post free prices: 1/43 scale: Alfa Romeo Guilia Sprint, Maserati 3500, Lancia Flavia, Porsche 912, etc. 14/- each. Ferrari Dino, Alfa Romeo Zagato 16/-. Rolls-Royce 18/-. All moving doors, bonnet, etc. Ask for list from M. Hodde, Lex Althoffstraat 24, Amsterdam.

Tri-ang HO/OO Model Railway. Worth over £40. Offers: 74 Hamilton Ave., Pyrford, Woking, Surrey. Byfleet 46790.

35 mm. colour slides. Special offer for limited period. Aircraft in flight, Hurricane, Spitfire, Gladiator, Swordfish, etc. Unique set of six 10/6d. only: Hill, 'Lamanva', Kings Lane, Harwell, Berks.

Metalskin new gloss metal finish now available. Self-adhesive Metalskin size 15 in. × 10 in. State gloss or matt finish. Send 4/6d. postal order to: Gordon Stevens, 18 Hillford Place, Earlswood, Surrey. Foreign orders 50% extra.

91 1:72 Aircraft. S.E.5 to Superfreighters. Offers? Smith, 29 Elton Drive, Hazelgrove, Cheshire.

PERSONAL

North-East WWII Wargamers, interested in German wargame campaigns, write: A. Hindmarsh, 9 Tebay Drive, Denton Burn, Newcastle upon Tyne, 5.

Wargamers interested in OO/HO, WWII battles, no fees just enthusiasm. For details contact sec: Dave Spencer, Eastbourne Wargamers Society, 70 Langney Rise, Langney, Eastbourne, Sussex.

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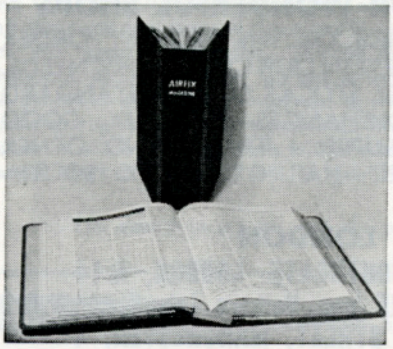

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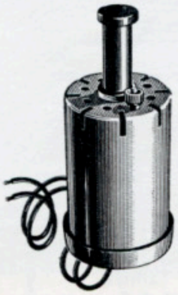

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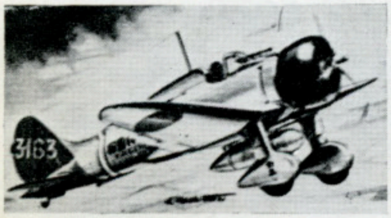

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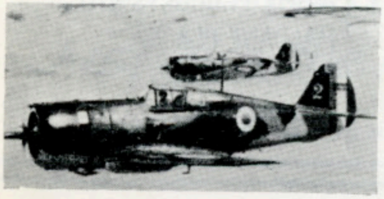

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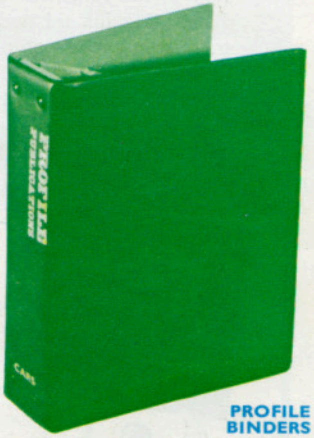

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